

Roger Williams Park Museum HVAC Renovations -REBID- 1000 Elmwood Ave, Providence, RI 02907

Bidders Set
2022-05-10

ADDENDUM 3



ARCHITECTS

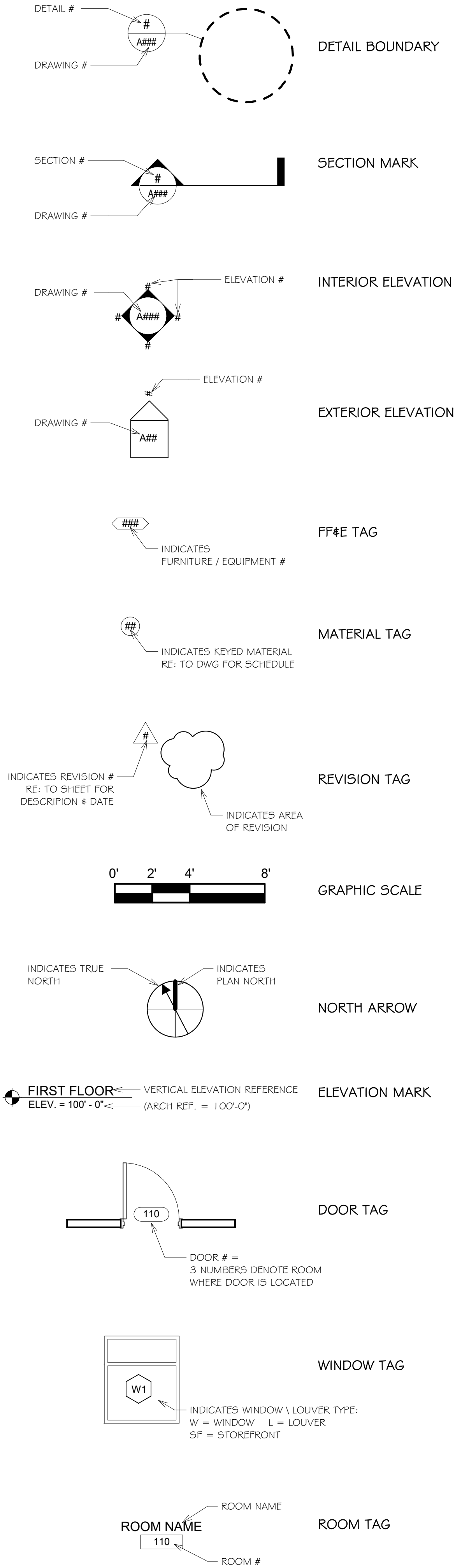
SACCOCCHIO & ASSOCIATES, INC.
1085 PARK AVENUE CRANSTON, RI 02910



ENGINEERS

ANDRE GILL ENGINEERING, LLC
MECHANICAL, PLUMBING AND ELECTRICAL ENGINEERS

ARCHITECTURAL SYMBOLS LEGEND



THERMAL AND/OR ACOUSTICAL BATT/BLANKET INSULATION

EARTH

CONCRETE

BRICK

CONCRETE MASONRY UNITS

RIGID INSULATION

PLYWOOD

ROUGH WOOD

GYPSUM WALLBOARD

STEEL

CODE INFORMATION

CODE LIST:

- International Building Code (2015 Edition) along with the Rhode Island State Building Code SBC 1 - 2019 Amendments)
- International Plumbing Code - 2015 w/ RI Amendments SBC-3 2019
- International Energy Conservation Code - 2015 w/ RI Amendments SBC-8, Climate Zone 5
- ICC / ANSI A117.1 - 2009 Edition
- NFPA 1 2018 Edition w/ 2019 Rhode Island Amendments
- NFPA 101: 2018 Edition w/ 2019 Rhode Island Amendments

PROJECT DESCRIPTION:

The project shall include the following:

Provide Architectural, Mechanical and Electrical design to provide design documents for the replacement of the HVAC systems serving the exhibit halls, education center, vaults, archives and office areas of the Museum of Natural History and Planetarium building. The project will address any code issues and include isolation and making safe of the existing oil tank (including testing). The project will address limited removal of ducting and rigging. Limited ducting and rigging abandonment in place. Sizing of systems, equipment locations, and ensuring the project meets the design intent, energy efficiency requirements, and full functionality are required. Energy efficiency and ease of operation are to be prioritized. National Grid efficiency incentive applications and submission will be the responsibility of this vendor. Throughout the project, engineering design will minimize disruption to Museum collections including the Vaults. This is a historic building. The Design Engineer will work with the Parks Department representative to have any impacts or changes to the building exterior approved by the Historical Committee.

Plumbing:

- Demo and remove existing water filtration skid. Demo and remove existing water heater.
- Demo and remove existing underground storage tank as required by DEM. If allowed by DEM the owner has a preference to abandon in place the UST.
- Install new electric water heater per specification and drawings. An approved equal water heater may be submitted for approval by Engineer of Record (EOR) AGE "and" Architect of Record (AOR) may be allowed.
- Submit a new water filtration skid meeting specifications and drawings for approval by EOR. Testing of water at point of entry and point of use shall be submitted EOR within one month of letter of intent is signed. The selection of the filtration skid has been specified in general, but each manufacturer provides slightly different sands and carbons. Depending on the exact content the systems will vary by manufacturer and shall be approved by EOR.
- Install fixtures as shown on Architectural drawings.

Mechanical

- Demo and remove equipment as shown on drawing. If equipment is listed as abandon in place all piping, ductwork and equipment "SHALL" be made safe.
- Abandon in place items may be removed in order install new piping, ductwork, and equipment with appropriate clearances. If cost to remove abandon in place items is less than working around the equipment it may be removed. If cost implications exist it shall be brought to the immediate attention of the AOR and EOR.
- Install all mechanical equipment shown on drawings. Field routing will be required for complete installation of equipment. No substitutions of Mechanical equipment are allowed.
- If substitution is necessary contractor shall provide equivalent equipment. The equipment shall meet and/or exceeds specified equipment. A Rhode Island Mechanical Professional Engineer shall sign off equipment meeting specified requirement.
- HVAC condensate piping shall be new and routed for ease of installation. The final location and sizes of the condensate piping shall be redlined and provided to the EOR and AOR for final drawing updates.

Electrical

- Demo and remove equipment as shown on drawings.

Install and connect all new equipment electrically per NEC

BUILDING CODE

Use and Occupancy Classification (Chapter 3):

Construction Type / Allowable Height (table 503):

Occupant Load (1004.1.1)

Egress Width (1005):

Stairways (1009)

Corridor Fire Rating (Table 1018.1)

Corridor Width (1018.2)

A3

Type IIIB = 55

Office = 100 gross

Assembly = 5 net (Standing)

Assembly = 62 gross (Seating)

.3" per occupant - Stairways

.2" per occupant - Other egress components

44" min width.

0 hr

44" min. width

2
G1.0
12" = 1'-0"

ARCHITECTURAL ABBREVIATION LEGEND

- = NO WORK NEEDED
ACT = ACOUSTICAL CEILING TILE
ACTT = ACOUSTICAL CEILING TILE-REGULAR
AFF = ABOVE FINISH FLOOR
ALUM = ALUMINUM
CBB = CEMENTITIOUS BACKER BOARD
CJ = CONTROL JOINT
CMU = CONCRETE MASONRY UNIT(S)
CO = CLEAN OUT
CONC = CONCRETE
CONST = CONSTRUCTION
CORR = CORRIDOR
CT = CERAMIC TILE
CPT = CARPET
CPTT = CARPET TILE
DEMO = DEMOLISH/DEMOLITION
DIA = DIAMETER
DIM = DIMENSION
DN = DOWN
DWG = DRAWING
ECT = ENTRANCE CARPET TILE
EJ = EXPANSION JOINT
ELEC = ELECTRIC/ELECTRICAL
EPX = EPOXY
EQ = EQUAL
ETR = EXISTING TO REMAIN
EXT = EXISTING
FD = FLOOR DRAIN
FE = FIRE EXTINGUISHER
FEC = FIRE EXTINGUISHER & CABINET
FF = FINISH FLOOR
FHC = FIRE HOSE CABINET
FIN = FINISH
FLR = FLOOR
FOC = FACE OF CONCRETE
FOS = FACE OF STUD
FR = FIRE RATED
FRP = FIBERGLASS REINFORCED PANEL
FRS = FIRE-RATED SAFETY GLASS
FT = FOOT/FEET
FTG = FOOTING
GA = GAUGE
GALV = GALVANIZED
GC = GENERAL CONTRACTOR
GLU.LAM = GLUE LAMINATED
GWB = GYPSUM WALL BOARD
GHM = GALVANIZED HOLLOW METAL
HS = HOSE BIBB
HM = HOLLOW METAL
HORIZ = HORIZONTAL
HR = HOUR
HVAC = HEATING/VENTILATING/AIR CONDITIONING
ID = INSIDE DIAMETER
INSUL = INSULATED
INT = INTERIOR
JAN = JANITOR
JT = JOINT
LAM = LAMINATE
LAV = LAVATORY
LWT = LIGHTWEIGHT
MAS = MASONRY
MAT = MATERIAL
MAX = MAXIMUM
MECH = MECHANICAL
MIN = MINIMUM
MISC = MISCELLANEOUS
MFR = MANUFACTURER
MO = MASONRY OPENING
MRT = MOISTURE RESISTANT TILE
NIC = NOT IN CONTRACT
NTS = NOT TO SCALE
OC = ON CENTER
OD = OUTSIDE DIAMETER
OFF = OFFICE
OPNG = OPENING
OPP = OPPOSITE
OTS = OPEN TO STRUCTURE
PLAM = PLASTIC LAMINATE
PT = PAINT or PRESSURE TREATED
PVC = POLYVINYL CHLORIDE
QT = QUARRY TILE
R = RISER
RAD = REMOVE & DISPOSE OF
RAD = RADIUS
RAF = RESILIENT ATHLETIC FLOORING
RD = ROOF DRAIN
REBAR = REINFORCEMENT BAR(S)
REINF = REINFORCEMENT
RH = ROBE HOOK
RM = ROOM
RMK = REMARK
RO = ROUGH OPENING
SF = SQUARE FOOT/FEET
S4F = STAIN & FINISH
SDT = STATIC DISSIPATING TILE
SEAL = SEALED CONCRETE
SGB = SUSPENDED GYPSUM BOARD
SIM = SIMILAR
SQ = SQUARE
SS = STAINLESS STEEL
STL = STEEL
STOR = STORAGE
STRUC = STRUCTURAL
SV = SHEET VINYL
SWG = SPECIAL WALL GLAZE
T4G = TONGUE & GROOVE
TEMP = TEMPERED
TOS = TOP OF STEEL
TV = TELEVISION
TOW = TOP OF WALL
TYP = TYPICAL
UON = UNLESS OTHERWISE NOTED
VB = VINYL BASE
VCT = VINYL COMPOSITION TILE
VERT = VERTICAL
VIF = VERIFY IN FIELD
VT = VINYL TILE
VWC = VINYL WALL COVERING
WJ = WITH
WC = WATER CLOSET
WD = WOOD
WH = WATER HEATER
W/O = WITHOUT
WP = WATERPROOF(ING)
WR = WATER RESISTANT
WWM = WELDED WIRE MESH

LIST OF DRAWINGS

GENERAL

G1.0 SHEET LIST, SYMBOLS, NOTES & ABBREVIATION LEGENDS

ARCHITECTURAL

A1.0 BASEMENT FLOOR PLAN

A1.1 1st FLOOR PLAN

A1.2 2nd FLOOR PLAN

A1.3 3rd FLOOR PLAN

A5.1 ROOF PLAN & DETAILS

A8.1 2nd FLOOR REFLECTED CEILING PLAN

MECHANICAL

M0.01 MECHANICAL GENERAL (INDEX, SYMBOLS, LEGEND, NOTES, ABBREVIATION, LOCATION MAP)

M1.00 (D) MECHANICAL PLANS (BASEMENT)

M1.01 (D) MECHANICAL PLANS (FIRST FLOOR)

M1.02 (D) MECHANICAL PLANS (SECOND FLOOR)

M1.03 (D) MECHANICAL PLANS (THIRD FLOOR)

M1.04 (D) MECHANICAL PLANS (ROOF)

M1.10 (N) MECHANICAL PLANS BASEMENT

M1.11 (N) MECHANICAL (FIRST FLOOR ZONES)

M1.12 (N) MECHANICAL (SECOND FLOOR ZONES)

M1.13 (N) MECHANICAL (THIRD FLOOR ZONES)

M1.14 (N) MECHANICAL (ROOF FLOOR ZONES)

M3.01 MECHANICAL SECTIONS

M5.01 MECHANICAL DETAILS

M5.02 MECHANICAL DETAILS

M6.01 MECHANICAL SCHEDULES

M7.01 VAV CONTROLS

M8.00 SEQUENCE OF OPERATIONS

ELECTRICAL

E0.01 ELECTRICAL GENERAL (INDEX, SYMBOLS, LEGEND, NOTES, ABBREVIATION)

E0.02 SINGLE LINE

E1.00 (D) ELCTETRICAL PLANS (BASEMENT)

E1.01 (D) ELCTETRICAL PLANS (FIRST FLOOR)

E1.02 (D) ELCTETRICAL PLANS (SECOND FLOOR)

E1.03 (D) ELCTETRICAL PLANS (THIRD FLOOR)

E1.04 (D) ELCTETRICAL PLANS (ROOF)

E1.10 (N) ELCTETRICAL PLANS (BASEMENT)

E1.11 (N) ELCTETRICAL PLANS (FIRST FLOOR)

E1.12 (N) ELCTETRICAL PLANS (SECOND FLOOR)

E1.13 (N) ELCTETRICAL PLANS (THIRD FLOOR)

E2.01 PANEL SCHEDULES

E2.02 PANEL SCHEDULES

GENERAL NOTES

THE CONTRACTOR/S SHALL:

- UNDERSTAND THAT THE TERM "PROVIDE" AS LISTED ON THE ARCHITECTURAL DRAWINGS SHALL MEAN "FURNISH AND INSTALL".
- UNDERSTAND THAT UNLESS SPECIFICALLY NOTED AS "PROVIDED BY OTHERS" OR "PROVIDED BY OWNER", ALL WORK IN THESE CONTRACT DOCUMENTS IS TO BE PERFORMED BY THE GENERAL CONTRACTOR AND/OR THEIR SUB CONTRACTORS.
- VISIT THE JOB SITE AND FAMILIARIZE THEMSELVES COMPLETELY WITH ALL EXISTING CONDITIONS RELATIVE TO THE NEW WORK CALLED FOR ON THE DRAWINGS AND SPECIFICATIONS. NO COMPENSATION FOR EXTRA WORK ON BEHALF OF THE CONTRACTOR WILL BE CONSIDERED THAT COULD HAVE BEEN DETERMINED BY VISUAL OBSERVATION PRIOR TO BIDDING.
- UNDERSTAND THAT THESE DRAWINGS SHALL NOT BE SCALED FOR CONSTRUCTION PURPOSES. IF ANY DIMENSION IS INADVERTENTLY OMITTED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND THE CORRECT DIMENSIONS WILL BE RETURNED AS REQUIRED.
- UNDERSTAND THAT THE TERM "MATCH EXISTING" AS LISTED ON THESE DRAWINGS SHALL MEAN THAT ALL WORK TO BE PERFORMED MUST BE OF SIMILAR MATERIALS, CONSTRUCTION AND FINISHED TO THE LINES OF ADJACENT WORK IN ALL RESPECTS.
- BE RESPONSIBLE FOR ALL CUTTING, FILLING, PATCHING AND/OR REPAIRING OF EXISTING WALLS, FLOORS, CEILINGS, ROOFS, AND ALL OTHER BUILDING ELEMENTS AS REQUIRED FOR THE INSTALLATION OF ALL NEW MECHANICAL, ELECTRICAL AND PLUMBING WORK IN THE EXISTING BUILDING. (VERIFY ALL CONDITIONS AT THE SITE).
- PATCH AND REPAIR ALL WALLS, FLOORS, CEILINGS, ROOFS AND ALL OTHER BUILDING AND SITE ELEMENTS IN ALL AREAS AFFECTED BY DEMOLITION WORK. ALL WORK TO BE PERFORMED MUST BE OF SIMILAR MATERIALS, CONSTRUCTION AND FINISHED TO THE LINES OF ADJACENT WORK IN ALL RESPECTS.
- COORDINATE ALL MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL, FIRE ALARM CIVIL, AND ALL OTHER WORK INCLUDED IN THIS CONTRACT, WITH THE ARCHITECTURAL DRAWINGS PRIOR TO PROCEEDING WITH THE NEW WORK IN ALL AREAS.
- PROVIDE DUST PARTITIONS AS REQUIRED TO KEEP AREAS OUTSIDE OF SCOPE FREE OF DIRT AND DUST. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING ANY AREAS LEFT UNPROTECTED.
- BE RESPONSIBLE TO CLEAN THE WORK AREA AT THE END OF EACH WORK DAY. ALL TRASH AND DEBRIS TO BE REMOVED FROM THE BUILDING.
- SUBMIT M.E.P. COORDINATION DRAWINGS TO THE ARCHITECT FOR REVIEW OF LOCATIONS OF ALL SYSTEMS TO AVOID CONFLICTS AND COORDINATE LOCATIONS OF ALL DEVICES AND LIGHTING.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL FLOOR AND WALL PENETRATIONS FOR ARCHITECTURAL, ELECTRICAL AND MECHANICAL WORK. ALL SUCH OPENINGS SHALL BE FRAMED AND STRUCTURALLY REINFORCED. PROVIDE FIRE BLOCKING AT ANY NEW PENETRATIONS AS REQUIRED BY CODE. SURROUNDING FINISHES AND PAINTS SHALL MATCH EXISTING.
- THE GENERAL CONTRACTOR WILL FOLLOW THE EPA'S LEAD RENOVATION, REPAIR AND PAINTING RULE (RRP) REQUIRING THAT FIRMS PERFORMING RENOVATION, REPAIR AND PAINTING PROJECTS THAT DISTURB LEAD-BASED PAINT MUST BE CERTIFIED BY EPA (OR AN EPA-AUTHORIZED STATE), USE CERTIFIED RENOVATORS WHO ARE TRAINED BY EPA-APPROVED TRAINING PROVIDERS AND FOLLOW LEAD-SAFE WORK PRACTICES.

1
G1.0

NOTES-GENERAL

12" = 1'-0"

SPECIAL NOTES

THE CONTRACTOR/S SHALL:

NFPA 909: CODE FOR THE PROTECTION OF CULTURAL RESOURCE PROPERTIES - MUSEUMS.
THE GENERAL CONTRACTOR SHALL PROTECT CULTURALLY SIGNIFICANT PROPERTIES FROM FIRE AND OTHER HAZARDS WITH THE 2013 NFPA 909. NFPA 909: CODE FOR THE PROTECTION OF CULTURAL RESOURCE PROPERTIES - MUSEUMS, LIBRARIES, AND PLACES OF WORSHIP DESCRIBES PRINCIPLES AND PRACTICES OF PROTECTION FOR CULTURAL RESOURCE PROPERTIES (MUSEUMS, LIBRARIES, AND PLACES OF WORSHIP) AND THEIR CONTENTS AND COLLECTIONS FROM CONDITIONS OR PHYSICAL SITUATIONS WITH THE POTENTIAL TO CAUSE DAMAGE OR LOSS THROUGH A COMPREHENSIVE PROTECTION PROGRAM. AREAS ADDRESSED INCLUDE FIRE PREVENTION; FIRE PROTECTION MANAGEMENT; SECURITY; EMERGENCY PREPAREDNESS; AND INSPECTION, TESTING, AND MAINTENANCE OF PROTECTION SYSTEMS. THIS IMPORTANT CODE ALSO COVERS ONGOING OPERATIONS AND REHABILITATION AND ACKNOWLEDGES THE NEED TO PRESERVE CULTURALLY SIGNIFICANT AND CHARACTER-DEFINING BUILDING FEATURES AND SENSITIVE, OFTEN IRREPLACEABLE, COLLECTIONS.

4
G1.0

CULTURAL RESOURCE

12" = 1'-0"



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Museum of Natural History

HVAC
Renovations
-REBID-

Roger Williams Park R.I.

Revision Schedule

Revision Number	Revision Date
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ADDENDUM 3
10 MAY 2022

BIDDERS SET
NOT FOR CONSTRUCTION

SHEET TITLE

SHEET LIST,
SYMBOLS,
NOTES &
ABBREVIATION
LEGENDS

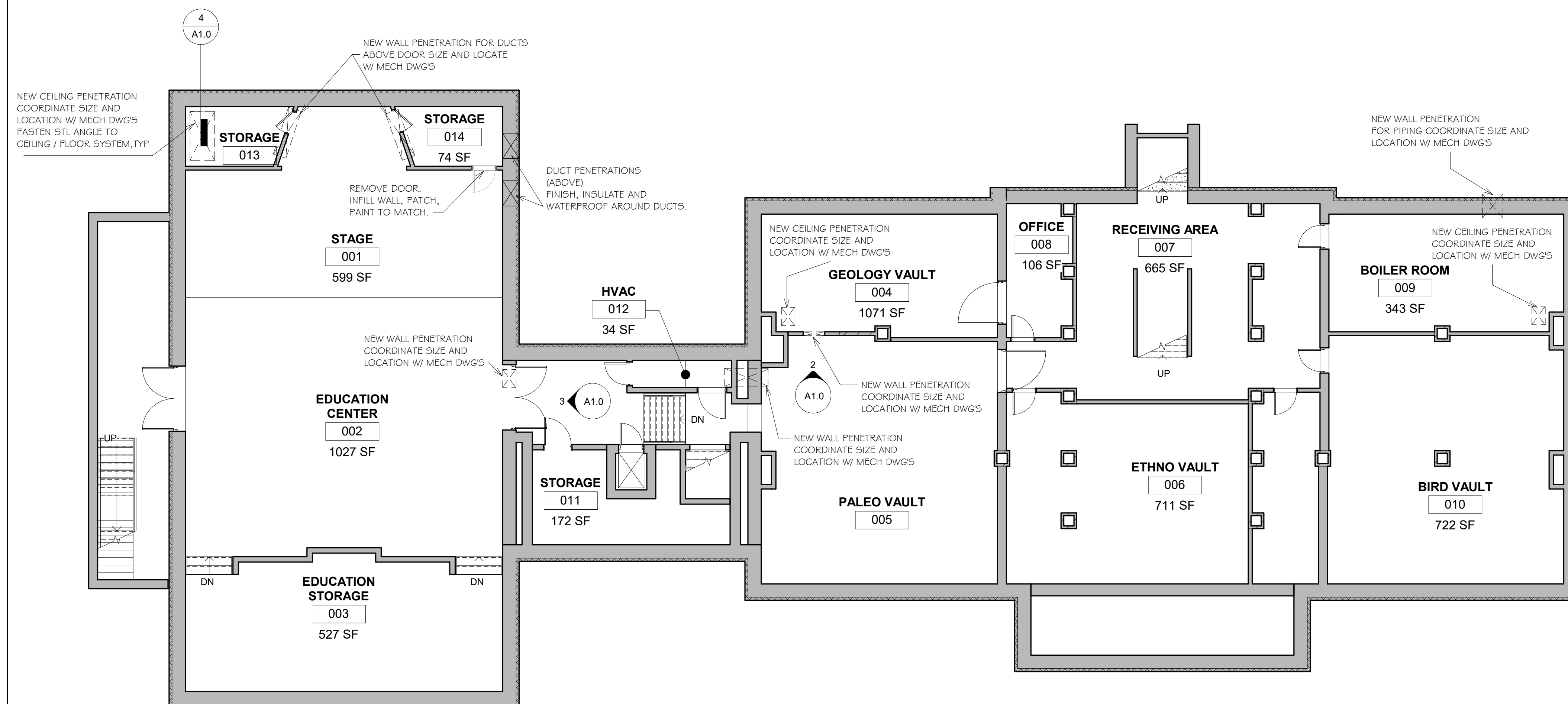
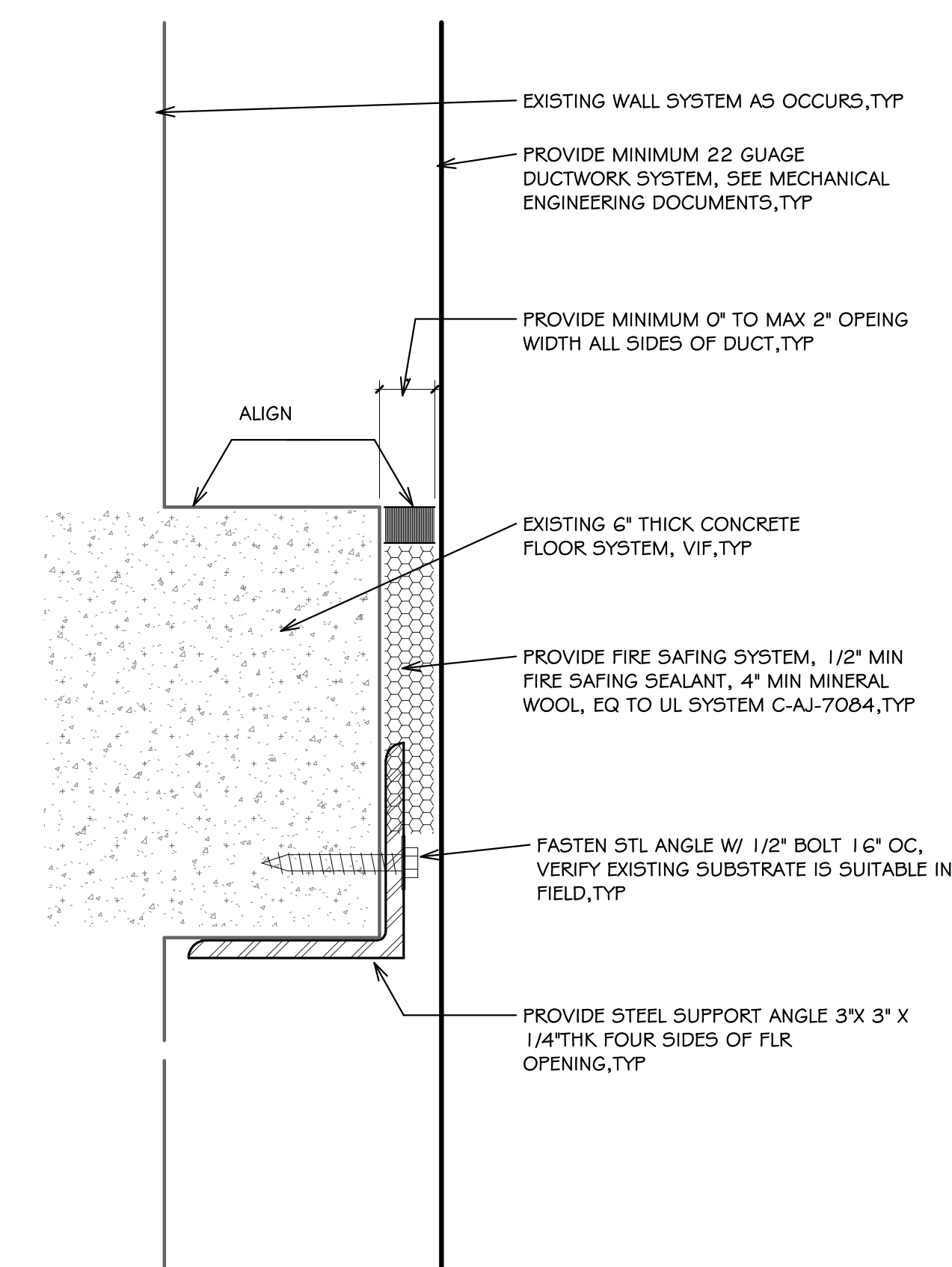
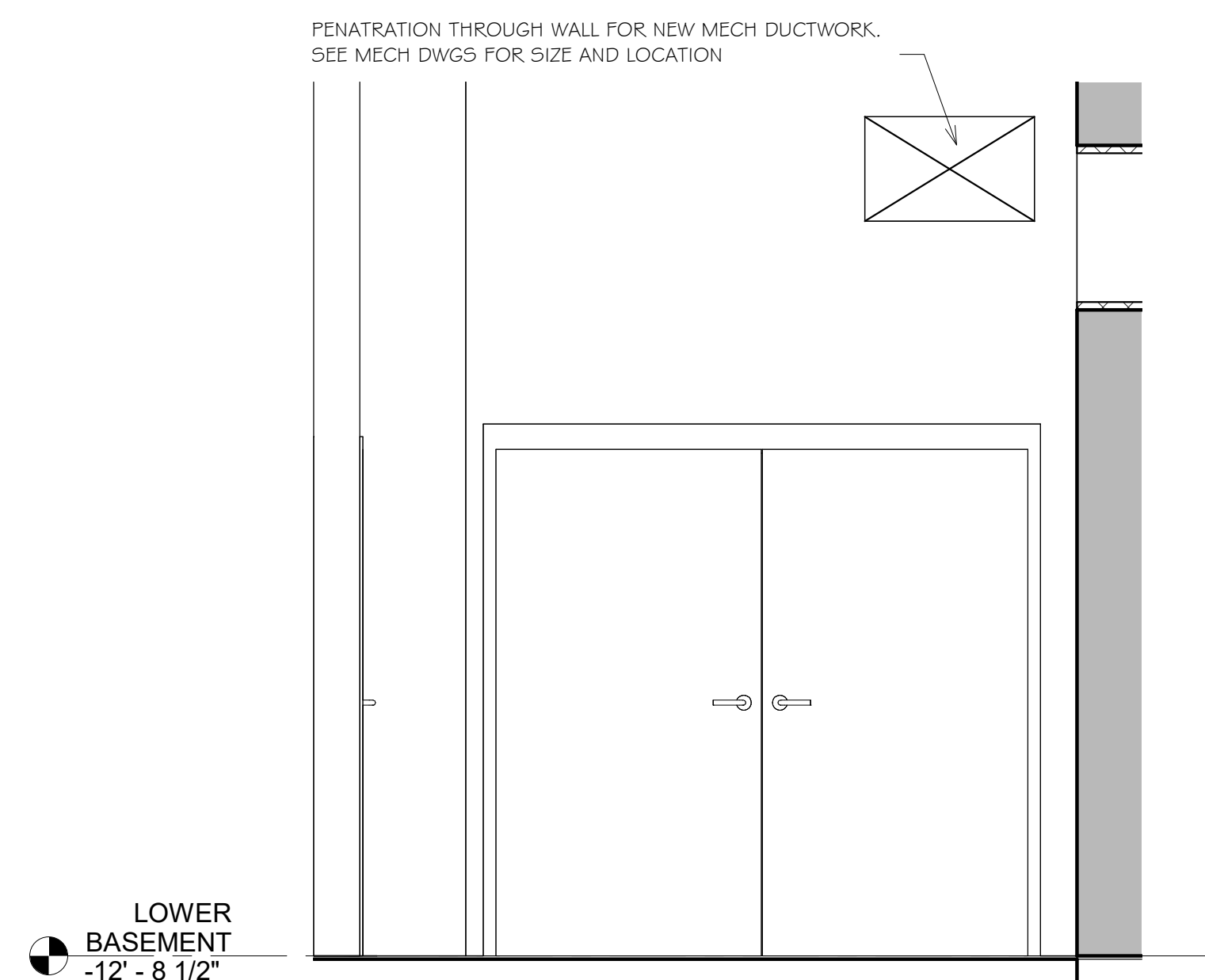
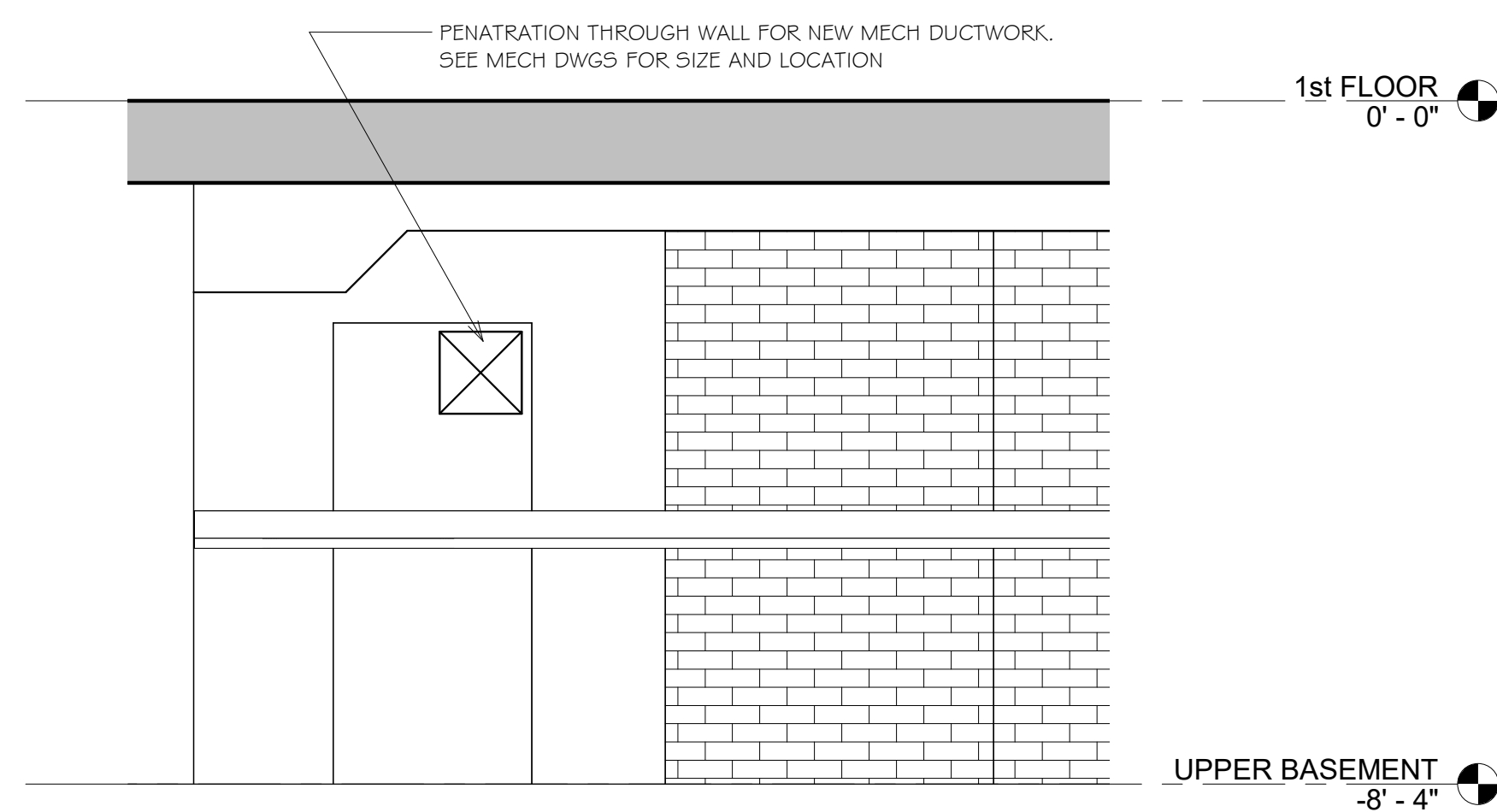
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G1.0

SHEET: OF:



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SHEET TITLE
BASEMENT
FLOOR PLAN

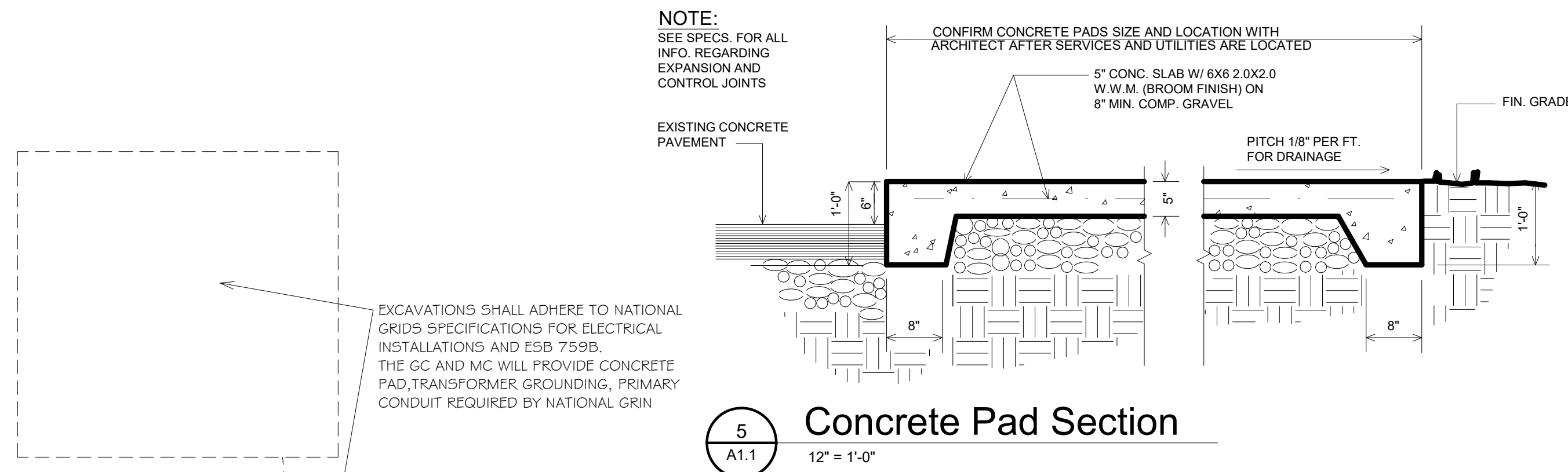
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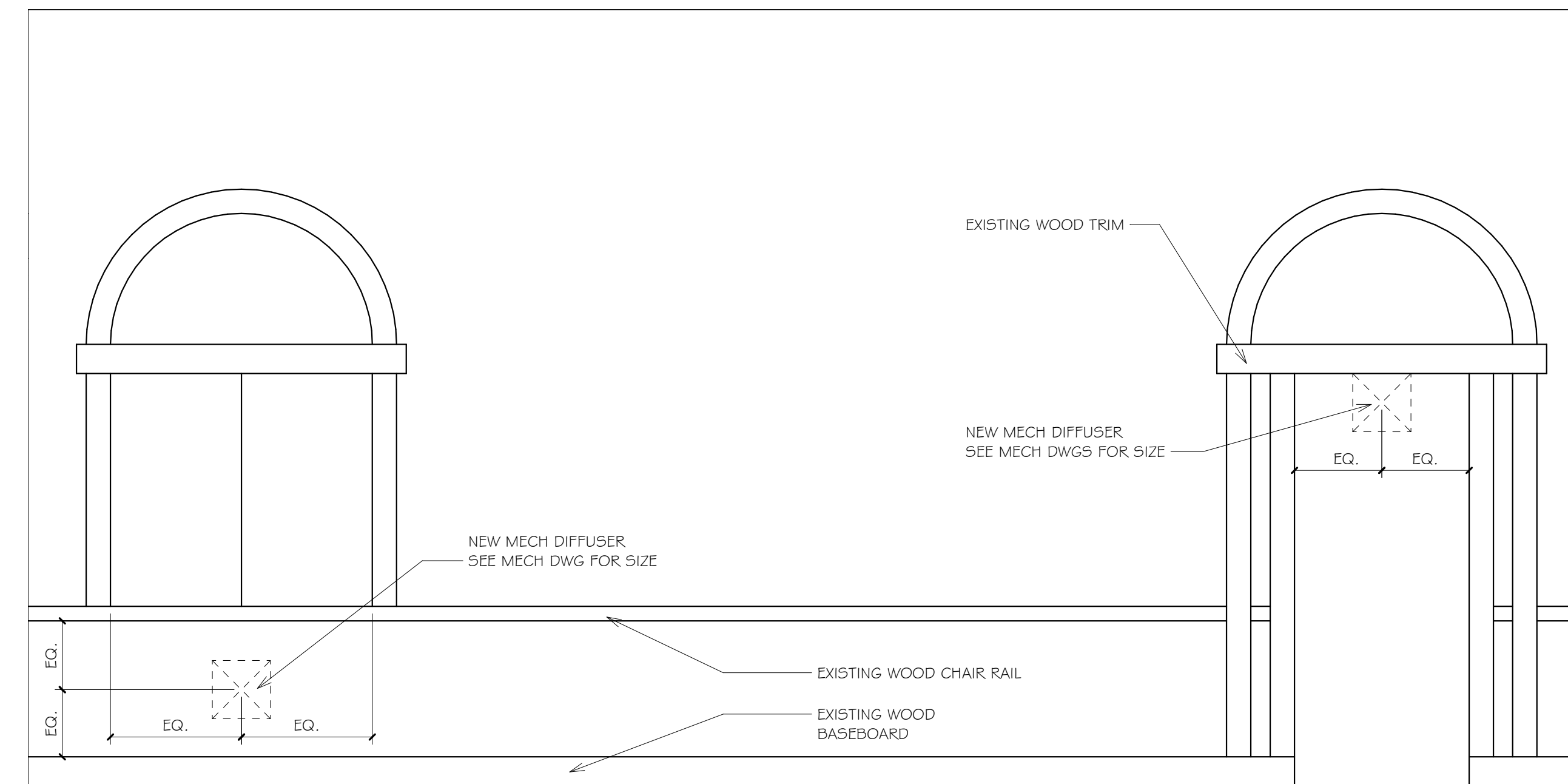
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A1.0

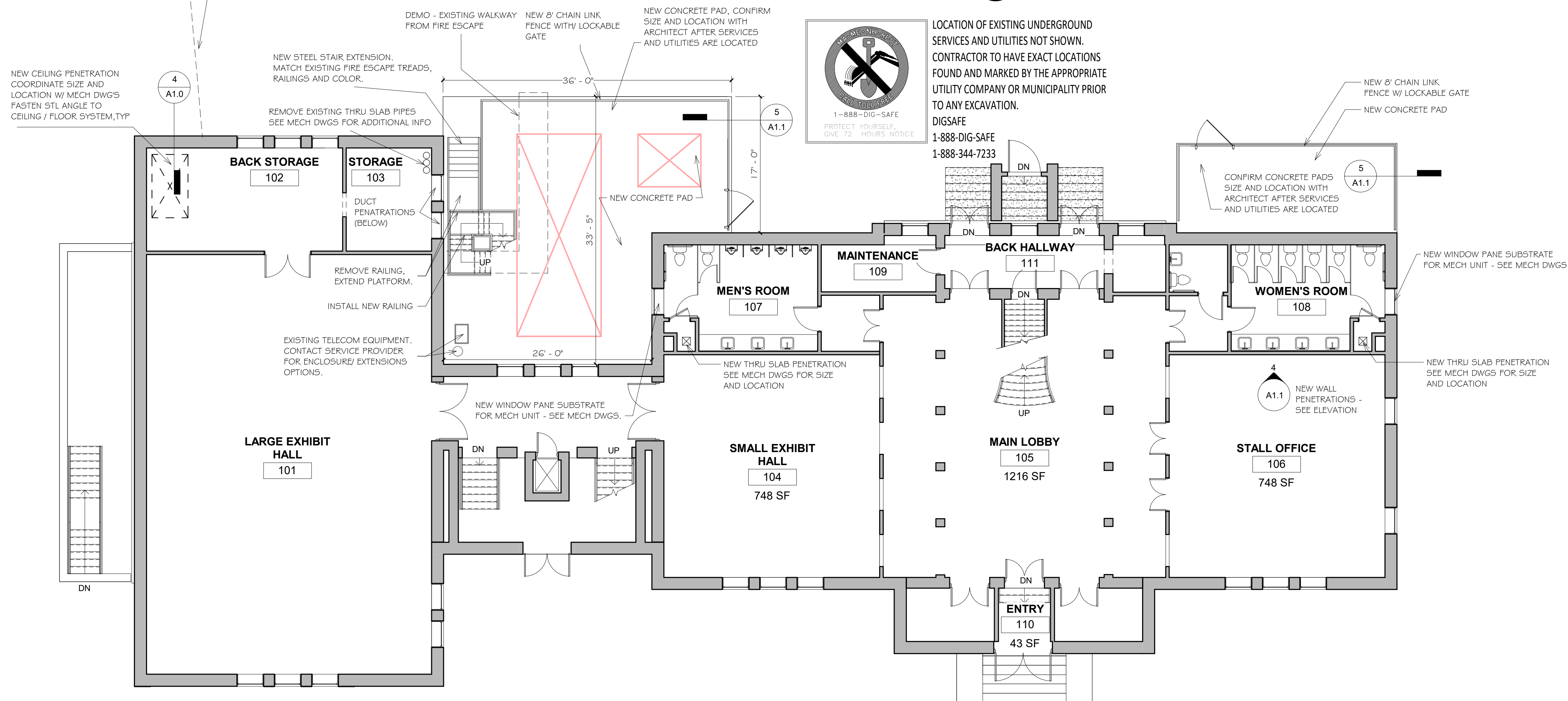
SHEET: OF:



5 Concrete Pad Section
12" = 1'-0"



4 Wall Penetration in Office
1/2" = 1'-0"



1 1st FLOOR PLAN
1/8" = 1'-0"



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SHEET TITLE
1st FLOOR PLAN

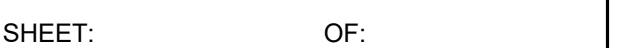
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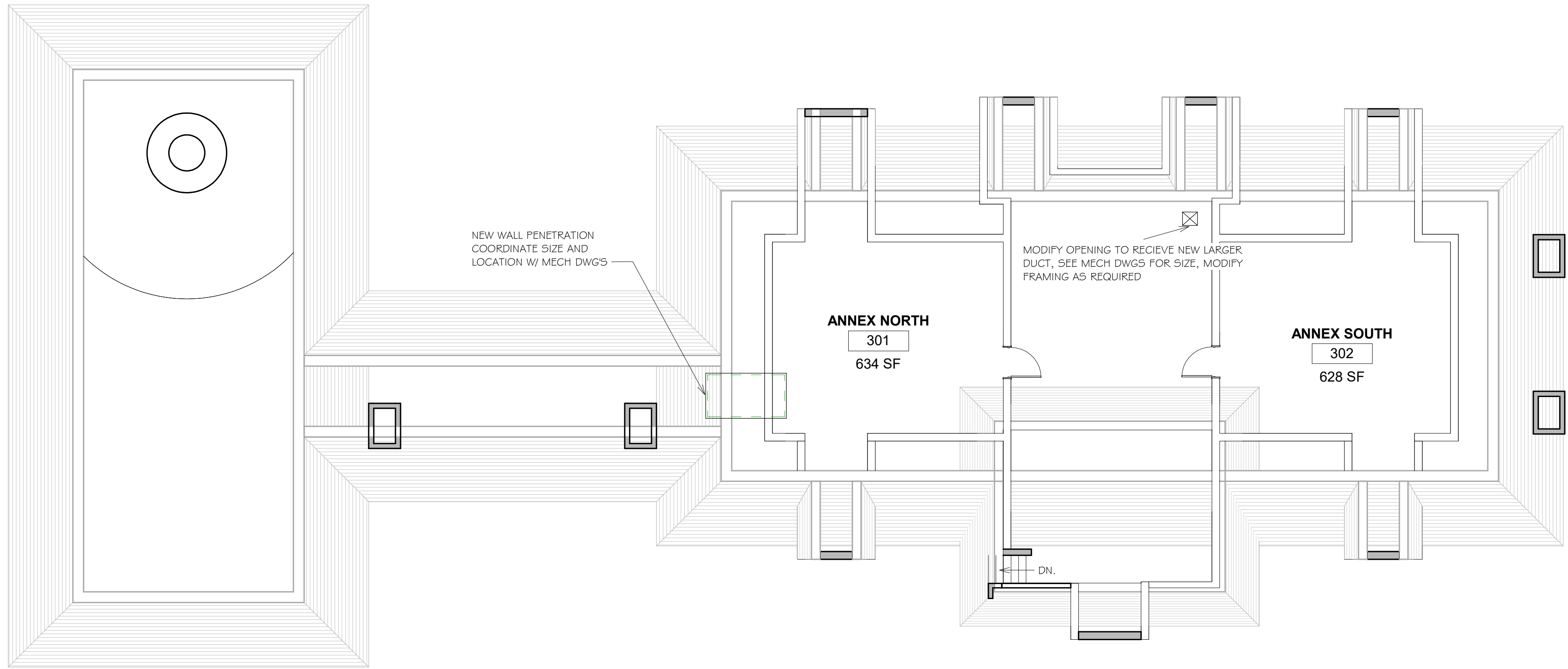
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A1.1

SHEET: OF:





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SHEET TITLE
3rd FLOOR PLAN

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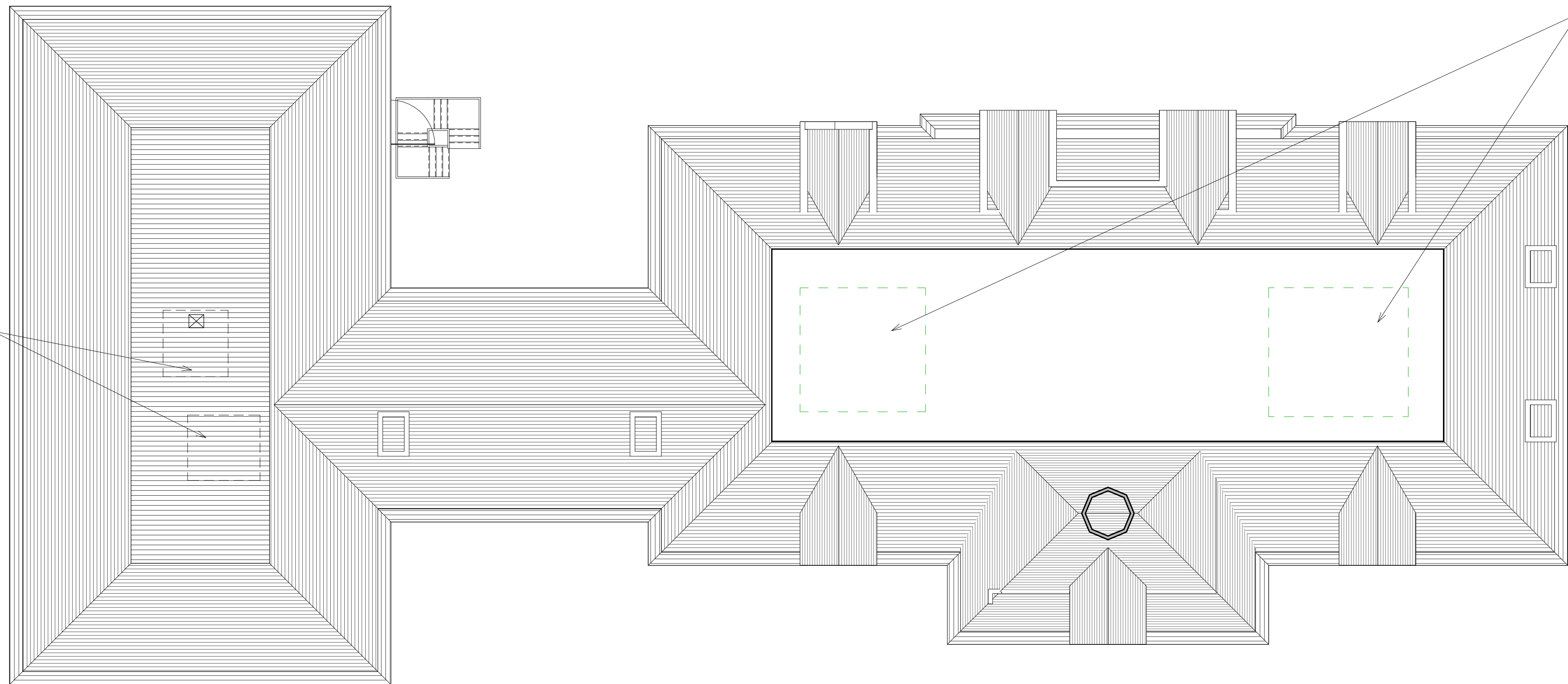
A1.3

SHEET: OF:

REMOVE
EQUIPMENT,
SECURE
DUCTWORK AND
CAP PER EPDM
MANUFACTURERS
REQUIREMENTS.



REMOVE
EQUIPMENT,
SECURE
DUCTWORK AND
CAP PER EPDM
MANUFACTURERS
REQUIREMENTS.



REMOVE
EQUIPMENT,
SECURE
DUCTWORK AND
CAP PER EPDM
MANUFACTURERS
REQUIREMENTS.

1
A5.1

ROOF PLAN

1/8" = 1'-0"



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SHEET TITLE ROOF PLAN

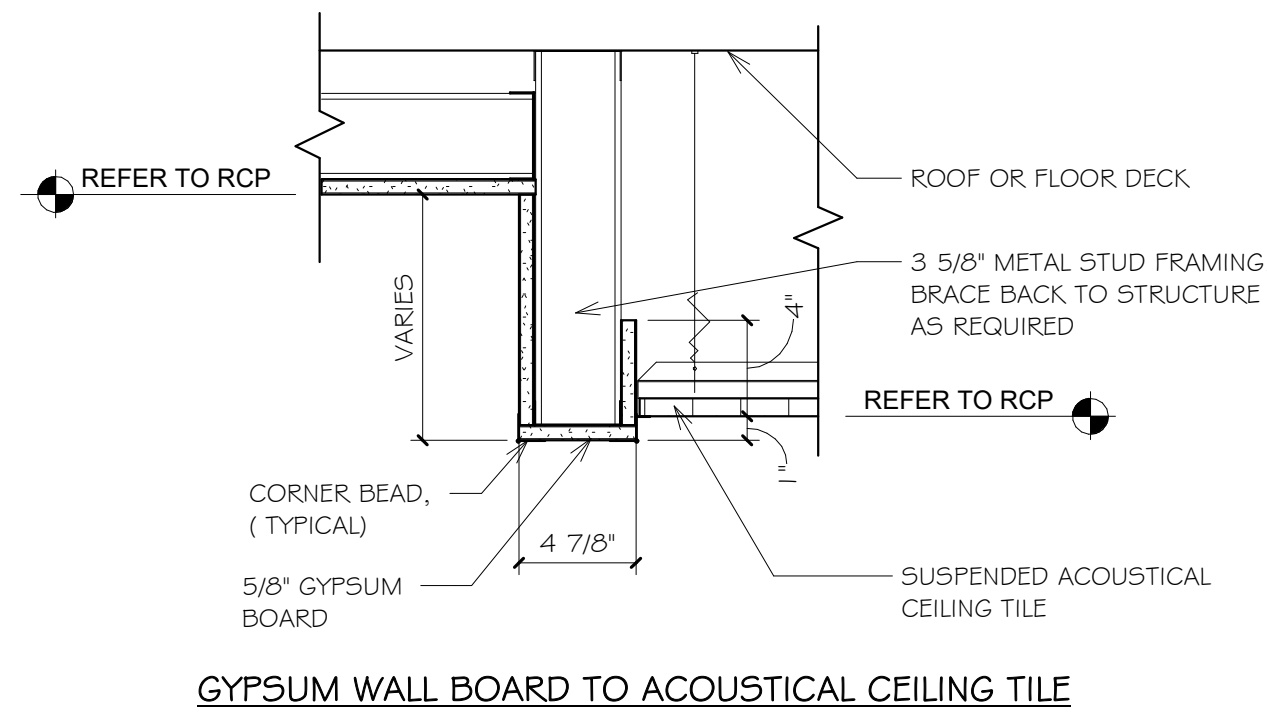
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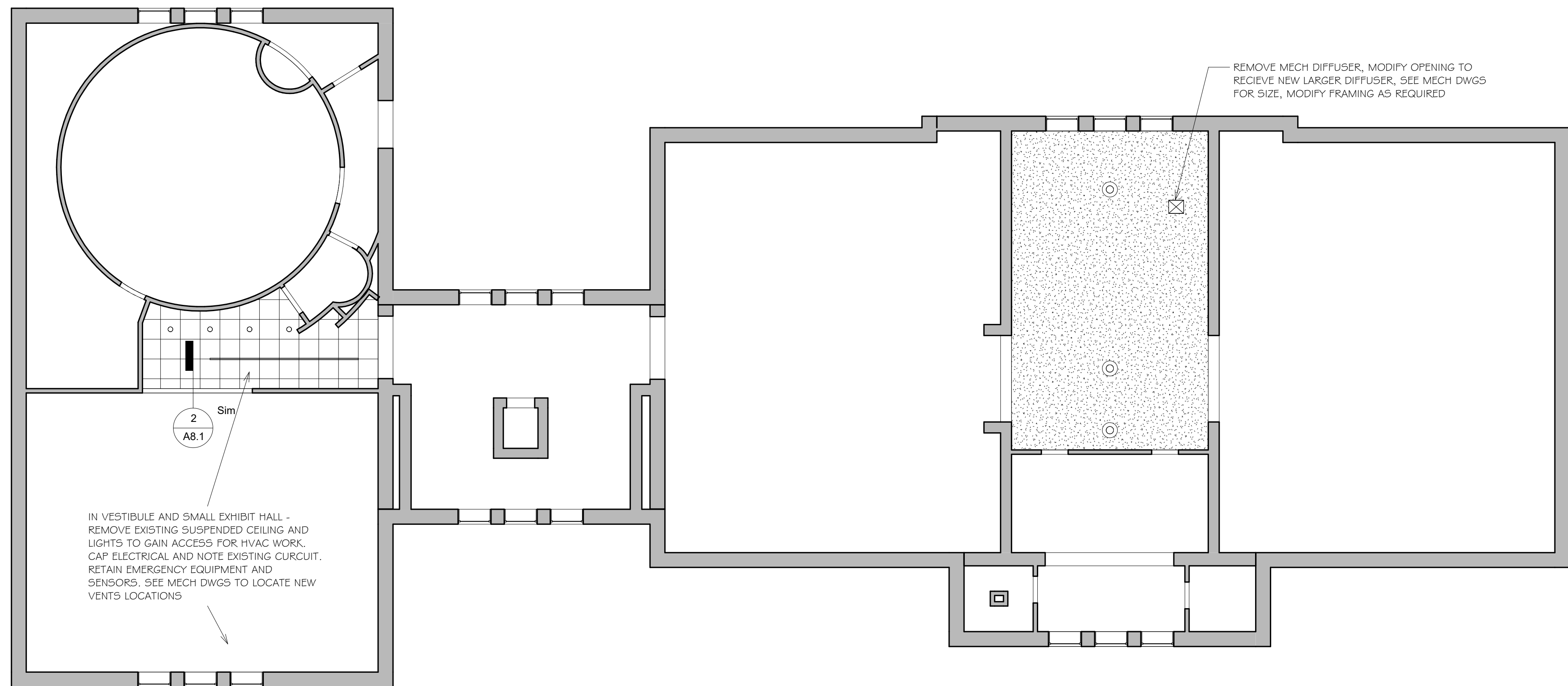
A5.1

SHEET: OF:



2
A8.1
1 1/2" = 1'-0"

CEILING SOFFIT TRANSITION DETAIL



1
A8.1
1/8" = 1'-0"

2nd FLOOR REFLECTED CEILING PLAN



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**SHEET TITLE
2nd FLOOR
REFLECTED
CEILING PLAN**

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A8.1

SHEET: OF:

GENERAL NOTES

- A

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KK
- THERE SHALL BE NO SERVICE INTERRUPTION

PRIOR TO COMMENCING WORK CONTRACTOR SHALL VERIFY EXACT LOCATION OF DOMESTIC WATER, VENT AND DEPTH OF EXISTING SEWER LINES IN THE FIELD.

a.

ALL PIPING SHALL BE IDENTIFIED ON REDLINE DRAWINGS TO BE PROVIDED BY CONTRACTOR TO ENGINEER, OWNER AND ARCHITECT, INCLUDING SIZE, INVERT ELEVATIONS, DIRECTION OF FLOW AND LOCATION OF ALL VALVES, UNIONS, TRAPS, FLANGES, AND OTHER APPURTENANCES.

PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTAL ALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.

CONTRACT DOCUMENT DRAWINGS FOR MECHANICAL WORK (HVAC, PLUMBING, AND FIRE PROTECTION) ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY.

INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.

ALL PIPING ON THIS PLAN SHALL BE CONCEALED UNLESS OTHERWISE NOTED.

REPAIR PAVING/FLOOR AFTER INSTALLATION AND INSPECTION OF UTILITIES INSTALLED. PAINT FLOOR TO MATCH PREVIOUS OR MATCH AND COMPLY WITH ARCHITECTURAL DRAWINGS.

CONTRACTOR TO RECONNECT EXISTING ELECTRICAL GROUNDING/BONDING TO COLD WATER PIPING SYSTEM. PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.

PROVIDE VIBRATION ISOLATORS FOR ALL PIPING SUPPORTS CONNECTED TO AND WITHIN 50 FEET OF ISOLATED EQUIPMENT (EXCEPT AT BASE ELBOW SUPPORTS AND ANCHOR POINTS) THROUGHOUT MECHANICAL EQUIPMENT ROOMS, DOO THE SAME FOR SUPPORTS OF STEAM MAINS WITHIN 50 FEET OF BOILER OR PRESSURE REDUCING VALVES.

PROVIDE VIBRATION ISOLATORS FOR ALL PIPING SUPPORTS OF STEAM MAINS WITHIN 50 FEET OF BOILERS AND PRESSURE REDUCING VALVES.

THE LOCATION OF EXISTING UNDERGROUND/UNDERSLAB UTILITIES IS SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PAY FOR AND REPAIR ALL DAMAGES CAUSED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES UNLESS OTHERWISE INDICATED.

COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.

MAINTAIN A MINIMUM OF 6'-8" CLEARANCE TO UNDERSIDE OF PIPES, DUCTS, CONDUITS, SUSPENDED EQUIPMENT, ETC., THROUGHOUT ACCESS ROUTES IN MECHANICAL ROOMS.

ALL TESTS SHALL BE COMPLETED BEFORE ANY MECHANICAL EQUIPMENT OR PIPING INSULATION IS APPLIED.

LOCATE ALL TEMPERATURE, PRESSURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH STRAIGHT SECTION OF PIPE OR DUCT UP- AND DOWNSTREAM AS RECOMMENDED BY THE MANUFACTURER FOR GOOD ACCURACY. PROVIDE ACCESS PANELS WHERE REQUIRED.

TESTING, ADJUSTING, AND BALANCING AGENCY SHALL BE A MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). TESTING, ADJUSTING, AND BALANCING SHALL BE IN ACCORDANCE WITH THE AABC STANDARDS.

WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER SHALL BE USED.

REINFORCEMENT, DETAILING, AND PLACEMENT OF CONCRETE SHALL CONFORM TO ASTM 315 AND ACI 318. CONCRETE SHALL CONFORM TO ASTM C394. CONCRETE WORK SHALL CONFORM TO ACI 318, PART ENTITLED "CONSTRUCTION REQUIREMENTS." COMPRESSIVE STRENGTH IN 28 DAYS SHALL BE 3,000 PSI. TOTAL AIR CONTENT OF EXTERIOR CONCRETE SHALL BE BETWEEN 5 AND 7 PERCENT BY VOLUME. SLUMP SHALL BE BETWEEN 3 AND 4 INCHES. CONCRETE SHALL BE CURED FOR 7 DAYS AFTER PLACEMENT.

COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS, COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.

ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE AND DIVISION 16 OF THE SPECIFICATION.

Q. CONCRETE HOUSEKEEPING PADS TO SUIT MECHANICAL EQUIPMENT SHALL BE SIZED AND LOCATED BY THE MECHANICAL CONTRACTOR. MINIMUM CONCRETE PAD THICKNESS SHALL BE 6 INCHES. PAD SHALL EXTEND BEYOND THE EQUIPMENT A MINIMUM OF 6 INCHES ON EACH SIDE. CONCRETE HOUSEKEEPING PADS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE SIZE AND LOCATION OF CONCRETE HOUSEKEEPING PADS WITH GENERAL CONTRACTOR.

ALL MECHANICAL ROOM DOORS SHALL BE A MINIMUM OF 4'-0" WIDE.

WHERE BEAMS ARE INDICATED TO BE PENETRATED WITH DUCTWORK OR PIPING, COORDINATE DUCTWORK AND PIPING LAYOUT WITH BEAM OPENING SIZE AND OPENING LOCATIONS. COORDINATION SHALL BE DONE PRIOR TO FABRICATION OF DUCTWORK, CUTTING OF PIPING, OR FABRICATION OF BEAMS.

WHEN MECHANICAL WORK (HVAC, PLUMBING, SHEET METAL, FIRE PROTECTION, ETC.) IS SUBCONTRACTED, IT SHALL BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE SUBCONTRACTORS AND THE ASSOCIATED CONTRACTS. WHEN DISCREPANCIES ARISE PERTAINING TO WHICH CONTRACTOR PROVIDES A PARTICULAR ITEM OF THE MECHANICAL CONTRACT OR WHICH CONTRACTOR PROVIDES FINAL COORDINATION FOR A PARTICULAR ITEM OF THE MECHANICAL CONTRACT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE MECHANICAL CONTRACTOR, WHOSE DECISION SHALL BE FINAL.

THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE DETAILS.

ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN DETAILS FOR PIPING, DUCTWORK, AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.

PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS, AND OTHER CONCEALED MECHANICAL EQUIPMENT. ACCESS PANELS SHALL BE TURNED OVER TO GENERAL CONTRACTOR FOR INSTALLATION.

ALL EQUIPMENT, PIPING, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED, SPECIFIED, AND REQUIRED TO PROVIDE A VIBRATION FREE INSTALLATION.

ALL DUCTWORK, PIPING AND EQUIPMENT SUPPORTED FROM STRUCTURAL STEEL SHALL BE COORDINATED WITH GENERAL CONTRACTOR, ALL ATTACHMENTS TO STEEL BAR JOISTS, TRUSSES, OR JOIST GIRDERS SHALL BE AT PANEL POINTS. PROVIDE BEAM CLAMPS MEETING MSS STANDARDS.

WELDING TO STRUCTURAL MEMBERS SHALL NOT BE PERMITTED. THE USE OF C-CLAMPS SHALL NOT BE PERMITTED.

MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING SHALL NOT BE SUPPORTED FROM METAL DECK.

ALL ROOF MOUNTED EQUIPMENT CURBS FOR EQUIPMENT PROVIDED BY THE MECHANICAL CONTRACTOR SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE GENERAL CONTRACTOR. LOCATIONS AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.

ALL OPENINGS IN FIRE WALLS DUE TO DUCTWORK, PIPING, CONDUIT, ETC., SHALL BE FIRE STOPPED WITH A PRODUCT SIMILAR TO 3M OR APPROVED EQUAL.

ALL AIR CONDITIONING CONDENSATE DRAIN LINES FROM EACH AIR HANDLING UNIT AND ROOFTOP UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH "P" TRAP, AND PIPED TO NEAREST DRAIN. SEE DETAILS SHOWN ON THE DRAWINGS OR THE CONTRACT SPECIFICATIONS FOR DEPTH OF AIR CONDITIONING CONDENSATE TRAP.

REFER TO TYPICAL DETAILS FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION.

PIPING NOTES

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- PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE PIPING SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE. ELEVATIONS AS SHOWN ON THE DRAWINGS ARE TO THE CENTERLINE OF ALL PRESSURE PIPING AND TO THE INVERT OF ALL GRAVITY PIPING.

MAINTAIN A MINIMUM OF 36" OF GROUND COVER OVER ALL UNDERGROUND HVAC PIPING BUT ENSURE FROST LINE IS CONSIDERED AND MET.

UNLESS OTHERWISE NOTED, ALL CHILLED WATER AND HEATING WATER PIPING SHALL BE 3/4 INCH SIZE (EDIT SYSTEM TYPE OR PIPE SIZE TO SUIT PROJECT REQUIREMENTS).

PROVIDE AN AIR VENT AT THE HIGH POINT OF EACH DROP ALL HYDRONIC PIPING SYSTEMS INCLUDING BUT NOT LIMITED TO IN THE HEATING WATER, CHILLED WATER, AND OTHER CLOSED WATER PIPING SYSTEMS (EDIT SYSTEM TYPES TO SUIT PROJECT REQUIREMENTS). ALL PIPING SHALL GRADE TO LOW POINTS. PROVIDE HOSE END DRAIN VALVES AT THE BOTTOM OF ALL RISERS AND LOW POINTS.

UNLESS OTHERWISE NOTED, ALL PIPING IS OVERHEAD, TIGHT TO UNDERSIDE OF STRUCTURE OR SLAB, WITH SPACE FOR INSULATION IF REQUIRED.

INSTALL PIPING SO THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES, AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.

ALL VALVES SHALL BE INSTALLED SO THAT VALVE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED.

ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (MEMORY STOPS).

PROVIDE CHAINWHEEL OPERATORS FOR ALL VALVES IN EQUIPMENT ROOMS MOUNTED GREATER THAN 7'-0" ABOVE FLOOR LEVEL. CHAIN SHALL EXTEND TO 7'-0" ABOVE FLOOR LEVEL.

ALL VALVES (EXCEPT CONTROL VALVES) AND STRAINERS SHALL BE FULL SIZE OF PIPE BEFORE REDUCING SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS.

UNIONS AND/OR FLANGES SHALL BE INSTALLED AT EACH PIECE OF EQUIPMENT, IN BYPASSES, AND IN LONG PIPING RUNS (100 FEET OR MORE) TO PERMIT DISASSEMBLY FOR ALTERATION AND REPAIRS.

PITCH STEAM PIPING DOWNWARD IN THE DIRECTION OF FLOW 1/4 INCH IN 10 FEET (1 INCH IN 40 FEET) MINIMUM. PITCH ALL STEAM RETURN LINES DOWNWARD IN THE DIRECTION OF CONDENSATE FLOW 1/2 INCH PER 10 FEET (1 INCH IN 20 FEET) MINIMUM. WHERE LENGTH OF BRANCH LINES ARE LESS THAN 8 FEET, PITCH BRANCH LINES TOWARD MAINS 1/2 INCH PER FOOT MINIMUM.

PITCH UP ALL STEAM AND CONDENSATE RUNOUTS TO RISERS AND EQUIPMENT 1/2 INCH PER FOOT. WHERE THIS PITCH CANNOT BE OBTAINED, RUNOUTS OVER 8 FEET IN LENGTH SHALL BE ONE SIZE LARGER THAN NOTED.

TAP ALL BRANCH LINES FROM TOP OF STEAM MAINS (45 DEGREES PREFERRED, 90 DEGREES ACCEPTABLE). PROVIDE AN END OF MAIN DRIP AT EACH RISE IN THE STEAM MAIN. PROVIDE CONDENSATE DRIPS AT THE BOTTOM OF ALL STEAM RISERS, DOWNFED RUNOUTS TO EQUIPMENT, RADIATORS, ETC., AT END OF MAINS AND LOW POINTS, AND AHEAD OF ALL PRESSURE REGULATORS, CONTROL VALVES, ISOLATION VALVES, AND EXPANSION JOINTS.

ON STRAIGHT STEAM PIPING RUNS WITH NO NATURAL DRAINAGE POINTS, INSTALL DRIP LEGS AT INTERVALS NOT EXCEEDING 200 FEET WHERE PIPE IS PITCHED DOWNWARD. ON STEAM PIPING WITH A MAXIMUM OF 100 FEET WHERE THE PIPE IS PITCHED UP SO THAT CONDENSATE FLOW IS OPPOSITE OF STEAM FLOW.

STEAM TRAPS SHALL BE MINIMUM 3/4" SIZE.

INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.

ALL PIPING SHALL CLEAR DOORS AND WINDOWS.

ALL VALVES SHALL BE ADJUSTED FOR SMOOTH AND EASY OPERATION.

ALL PIPING WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

PROVIDE FLEXIBLE CONNECTIONS IN ALL PIPING SYSTEMS CONNECTED TO PUMPS, CHILLERS, COOLING TOWERS, AND OTHER EQUIPMENT WHICH REQUIRE VIBRATION ISOLATION EXCEPT WATER COILS. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AS CLOSE TO THE EQUIPMENT AS POSSIBLE OR AS INDICATED ON THE DRAWINGS.

SLOPE REFRIGERANT PIPING ONE PERCENT IN THE DIRECTION OF OIL RETURN. LIQUID LINES MAY BE INSTALLED LEVEL.

INSTALL HORIZONTAL REFRIGERANT HOT GAS DISCHARGE PIPING WITH 1/2" PER 10 FEET DOWNWARD SLOPE AWAY FROM THE REFRIGERATOR Z. INSTALL HORIZONTAL REFRIGERANT SUCTION LINES WITH 1/2" PER 10 FEET DOWNWARD SLOPE. TO THE COMPRESSOR, WITH NO LONG TRAPS OR DEAD ENDS WHICH MAY CAUSE OIL TO SEPARATE FROM THE SUCTION GAS AND RETURN TO THE COMPRESSOR IN DAMAGING SLUGS.

PROVIDE LINE SIZE LIQUID INDICATORS IN MAIN LIQUID LINE LEAVING CONDENSER OR RECEIVER. INSTALL MOISTURE-LIQUID INDICATORS IN LIQUID LINES BETWEEN FILTER DRYERS AND THERMOSTATIC EXPANSION VALVES AND IN LIQUID LINE TO RECEIVER.

PROVIDE LINE SIZE STRAINER UPSTREAM OF EACH AUTOMATIC VALVE. PROVIDE SHUTOFF VALVE ON EACH SIDE OF STRAINER.

PROVIDE PERMANENT FILTER DRYERS IN LOW TEMPERATURE SYSTEMS AND SYSTEMS USING HERMETIC COMPRESSORS.

PROVIDE REPLACEABLE CARTRIDGE FILTER DRYERS WITH THREE VALVE BYPASS ASSEMBLY FOR SOLENOID VALVES, ADJACENT TO RECEIVERS.

PROVIDE REFRIGERANT CHARGING VALVE CONNECTIONS IN LIQUID LINE BETWEEN RECEIVER SHUTOFF VALVE AND EXPANSION VALVE.

SCOPE OF WORK

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- ALL CONTRACTORS SHALL FOLLOW THE CURRENT ENFORCED **RHODE ISLAND STATE BUILDING CODES** AS A MINIMUM, HOWEVER SECTIONS OF THESE DOCUMENTS REFLECT CURRENT VERSION OF ICC INTERNATIONAL CODES WHERE THEY SUPERSEDE RISBC. ALL CONTRACTORS SHALL FOLLOW ALL LOCAL REQUIREMENTS BY AUTHORITIES HAVING JURISDICTION.

CONTRACTORS SHALL INSTALL ALL EQUIPMENT FOLLOWING ASHRAE, ASME, ASTM, NFPA AND NEC STANDARDS.

CONTRACTORS SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES AS SHOWN AND/OR IMPLIED ON DRAWINGS AND SPECIFICATIONS FOR A COMPLETE AND PROPER INSTALLATION. THE DRAWINGS ARE NOT ALL INCLUSIVE AND THE CONTRACTOR IS RESPONSIBLE FOR A COMPLETE INSTALLATION. THE DRAWINGS SHOW MAJOR COMPONENTS AND ALL QUALIFIED CONTRACTORS SHALL HAVE SUFFICIENT EXPERIENCE IN PERFORMANCE OF THIS INSTALLATION.

CONTRACTORS SHALL FURNISH AND INSTALL, PURGE, CHARGE, TEST AND OPERATE ALL EQUIPMENT, ACCESS DOORS, CAULKING, SLEEVES, FLASHING, FLEXIBLE CONNECTIONS, INSERTS, DEVICES, HANGERS, SUPPORTS, BRACING, FASTENERS, MISCELLANEOUS HARDWARE AND INSULATION.

CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS, INSPECTIONS AND TESTS REQUIRED BY GOVERNING AUTHORITIES HAVING JURISDICTION.

PROVIDED EQUIPMENT AND/OR EQUIPMENT COMPONENTS WITH UL LABELS TO COMPLY WITH THE NATIONAL ELECTRIC CODE.

MAINTAIN COMPLIANCE WITH OSHA THROUGHOUT THE CONSTRUCTION PHASE AND WITH COMPLETED WORK.

PROVIDE ALL LABOR, MATERIALS, PLANT EQUIPMENT AND SERVICES NECESSARY AND REQUIRED TO COMPLETE MEP WORK AS SHOWN ON AND/OR REASONABLY IMPLIED BY THE DRAWINGS AND SPECIFICATIONS.

THE FOLLOWING ARE THE GENERAL CLASSIFICATIONS OF WORK INCLUDED IN, BUT NOT LIMITED TO THIS SECTION.

RECEIVING, RIGGING, SETTING AND INSTALLATION OF THE PURCHASED EQUIPMENT.

PROVIDING OF SHOP DRAWINGS FOR APPROVAL, WITHIN ALLOWANCE OF ACCEPTANCE AND INSTALLATION TO NOT HINDER CONSTRUCTION SCHEDULE.

PURCHASE INSTALL, ELECTRICAL AND PIPING OF NEW EQUIPMENT AS SCHEDULED.

DEMOLITION AND MAKE SAFE EXISTING PIPING, DUCTWORK AND ASSOCIATED HANGERS AS INDICATED ON DRAWINGS.

DEMOLITION AND MAKE SAFE EXISTING ELECTRICAL AND CONDUIT AS REQUIRED.

LOW PRESSURE COMPRESSED AIR PIPING, VALVES, FITTINGS, LABELING, TAGGING, ETC.

STEAM AND CONDENSATE PIPING, VALVES, FITTINGS, LABELING, TAGGING, ETC.

PIPING SUPPORTS INSIDE AND OUTSIDE.

TIE-IN OF FIRE ALARMING DEVICES TO EXISTING SYSTEM.

CONTROL WIRING TO EQUIPMENT AND DEVICES.

WORK PERFORMED DURING SUMMER MONTHS SHALL MAINTAIN HUMIDITY IN ADDITION TO TEMPERATURES.

CUTTING AND PATCHING FOR ALL MECHANICAL WORK.

START-UP OPERATIONS.

CLEAN UP.

COORDINATION AND COOPERATION WITH CONTRACTORS AND SUPPLIERS FOR OTHER SECTIONS AND WITH THE OWNER.

AS- BUILT DRAWINGS.

WARRANTY AND GUARANTEE.

ELECTRICAL POWER WIRING OF NEW EQUIPMENT.

CONCRETE PADS AS REQUIRED.

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MECHANICAL PIPING LEGEND

SYMBOL	DESCRIPTION	ABR.
	EXISTING HOT WATER HEATING SUPPLY	HWH
	NEW HOT WATER HEATING SUPPLY BELOW FLOOR	HWH
	NEW HOT WATER HEATING SUPPLY ON LEVEL	HWH
	EXISTING HOT WATER RECIRCULATION	HWR
	NEW HOT WATER RECIRCULATION BELOW FLOOR	HWR
	NEW HOT WATER RECIRCULATION ON LEVEL	HWR
	EXISTING HOT WATER SUPPLY	HWS
	NEW HOT WATER SUPPLY BELOW FLOOR	HWS
	NEW HOT WATER SUPPLY ON LEVEL	HWS
	EXISTING HYDRONIC RETURN	HR
	NEW HYDRONIC RETURN BELOW FLOOR	HR
	NEW HYDRONIC RETURN ON LEVEL	HR
	EXISTING HYDRONIC SUPPLY	HS
	NEW HYDRONIC SUPPLY BELOW FLOOR	HS
	NEW HYDRONIC SUPPLY ON LEVEL	HS
	EXISTING STEAM CONDENSATE	COND
	NEW STEAM CONDENSATE BELOW FLOOR	COND
	NEW STEAM CONDENSATE ON LEVEL	COND
	EXISTING STEAM	STM
	NEW STEAM BELOW FLOOR	STM
	NEW STEAM ON LEVEL	STM
	EXISTING VARIABLE HEATING WATER RETURN	VHWR
	NEW VARIABLE HEATING HOT WATER RETURN BELOW FLOOR	VHWR
	NEW VARIABLE HEATING HOT WATER RETURN ON LEVEL	VHWR
	EXISTING VARIABLE HEATING WATER SUPPLY	VHWS
	NEW VARIABLE HEATING HOT WATER SUPPLY BELOW FLOOR	VHWS
	NEW VARIABLE HEATING HOT WATER SUPPLY ON LEVEL	VHWS

MECHANICAL PIPING LEGEND

SYMBOL	DESCRIPTION	ABR.
	EXISTING AIR INTAKE	AI
	NEW AIR INTAKE BELOW FLOOR	AI
	NEW AIR INTAKE ON LEVEL	AI
	EXISTING ANAEROBIC GAS	AG
	NEW ANAEROBIC GAS BELOW FLOOR	AG
	NEW ANAEROBIC GAS ON LEVEL	AG
	EXISTING CHILLED WATER RETURN	CWR
	NEW CHILLED WATER RETURN BELOW FLOOR	CWR
	NEW CHILLED WATER RETURN ON LEVEL	CWR
	EXISTING CHILLED WATER SUPPLY	CWS
	NEW CHILLED WATER SUPPLY BELOW FLOOR	CWS
	NEW CHILLED WATER SUPPLY ON LEVEL	CWS
	EXISTING CO2 GAS	CO
	NEW CO2 GAS BELOW FLOOR	CO
	NEW CO2 GAS ON LEVEL	CO
	EXISTING COMPRESSED AIR	CA
	NEW COMPRESSED AIR BELOW FLOOR	CA
	NEW COMPRESSED AIR ON LEVEL	CA
	EXISTING CONDENSATE	C
	NEW CONDENSATE BELOW FLOOR	C
	NEW CONDENSATE ON LEVEL	C
	EXISTING HOT WATER HEATING RETURN	HWHR
	NEW HOT WATER HEATING RETURN BELOW FLOOR	HWHR
	NEW HOT WATER HEATING RETURN ON LEVEL	HWHR
	EXISTING TO BE DEMOLISHED ON LEVEL	DIAMETER ONLY
	EXISTING TO BE DEMOLISHED BELOW FLOOR	DIAMETER ONLY

DRAWING AND SPECIFICATIONS

- A

B
- IT IS THE INTENTION OF THE SPECIFICATIONS AND DRAWINGS TO CALL FOR COMPLETE, FINISHED WORK, TESTED AND READY FOR CONTINUOUS OPERATION. ANY APPARATUS, APPLIANCE, MATERIAL, OR WORK NOT SHOWN ON THE DRAWINGS, BUT MENTIONED IN THE SPECIFICATIONS, OR ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE IN ALL RESPECTS AND READY FOR OPERATION, EVEN IF NOT PARTICULARLY SPECIFIED, SHALL BE PROVIDED BY THE HVAC SUBCONTRACTOR OR HIS/HER SUB-SUBCONTRACTORS, WITHOUT ADDITIONAL EXPENSE TO THE OWNER.

THE DRAWINGS ARE GENERALLY DIAGRAMMATIC. THE LOCATIONS OF ALL ITEMS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS MUST BE DETERMINED AT THE SITE AND SHALL HAVE THE APPROVAL OF THE ARCHITECT BEFORE BEING INSTALLED. THE HVAC SUBCONTRACTOR SHALL FOLLOW DRAWINGS, INCLUDING SHOP DRAWINGS, IN LAYING OUT WORK AND SHALL CHECK THE DRAWINGS OF OTHER TRADES TO VERIFY SPACES IN WHICH WORK WILL BE INSTALLED. MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITIONS. WHERE SPACE CONDITIONS APPEAR INADEQUATE, NOTIFY THE ARCHITECT BEFORE PROCEEDING WITH THE INSTALLATION. THE HVAC SUBCONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE REASONABLE MODIFICATIONS IN THE LAYOUT AS NEEDED TO PREVENT CONFLICT WITH WORK OF OTHER TRADES OR FOR PROPER EXECUTION OF THE WORK.

CONSULTANTS

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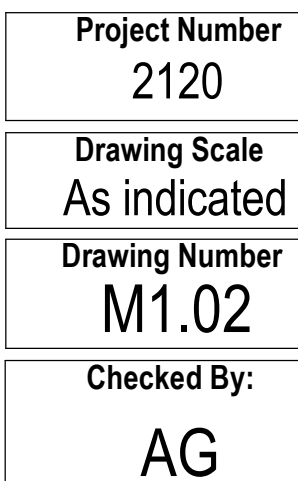
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Project Title: RWP MNH HVAC UPGRADE REBID		Project Number 2120	
Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale As indicated	
Drawing Title: MECHANICAL GENERAL		Drawing Number M0.01	
Issue Date: 09MAY22	Approved By: AG	Drawn By: AGE	Checked By: AG



5/9/2022 9:48:12 PM

1 (D) 3RD FLOOR
3/16" = 1'-0"

DEMO CALLOUT NOTES	
#	NOTE
1	(D) DEMO AND REMOVE EQUIPMENT/DUCTWORK/PIPING
2	(E) EXISTING TO REMAIN EQUIPMENT/DUCTWORK/PIPING (SHALL BE TESTED FOR FIT FOR USE)
3	(A) ABANDON IN PLACE EQUIPMENT/DUCTWORK/PIPING (SHALL BE MADE SAFE)
4	DEMO RISER ON SECOND FLOOR. CUT AND CAP AND USE TRANSITION AS FLOOR TO FLOOR.
5	DEMO ALL AIR TERMINALS IN THIS SPACE AND REPLACE PER NEW DRAWINGS.
6	HATCHED AREA IS TO HAVE CEILING GRID REMOVED. ALL EQUIPMENT, DUCTWORK AND PIPING TO BE MADE SAFE.
7	DEMO RISER ON BASEMENT FLOOR. CUT AND CAP IN BASEMENT AND USE TRANSITION AS FLOOR TO FLOOR.
8	DEMO AND REMOVE MECHANICAL EQUIPMENT IN BOILER ROOM.

DEMO CALLOUT NOTES	
#	NOTE
9	DEMO OF CHILLERS SHOULD OCCUR IN PHASE 1. SEE ELECTRICAL DRAWINGS FOR INFORMATION ON NEW ELECTRICAL PANEL.
10	AC-1 IS TO BE DISCONNECTED IN A WAY THAT THE EQUIPMENT CAN BE REUSED IN ANOTHER PROVIDENCE PROJECT.
11	FOR EXISTING CONDUIT SEE ELECTRICAL DRAWINGS FOR FURTHER INSTRUCTION.
12	LIMIT OF DEMOLITION
13	PATCH AND MAKE SAFE. REFER TO ARCHITECTURAL DRAWINGS.
14	(A) ABANDON DUCTWORK IN PLACE AND REMOVE AIR TERMINALS (SHALL BE MADE SAFE)
15	DEMO GRILLES AND ADD ACOUSTICAL PANELS.
16	DO NOT DEMO ELECTRICAL MDP UNTIL AFTER NEW SERVICE IS RUNNING.

DEMO NOTES

- A. EXISTING CONDITIONS SHOWN ARE BASED ON AND NON-DESTRUCTIVE FILED INVESTIGATION. FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
- B. PATCH PENETRATIONS THAT ARE NOT USED FOR NEW HVAC SYSTEM. COORDINATE WITH ARCHITECTURAL WORK.

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Project Title:
RWP MNH HVAC UPGRADE REBID

Project Number
2120

Location:
1000 ELMWOOD AVE
PROVIDENCE, RI 02907

Drawing Scale
As indicated

Drawing Title:
(D) MECHANICAL PLANS (THIRD FLOOR)

Drawing Number
M1.03

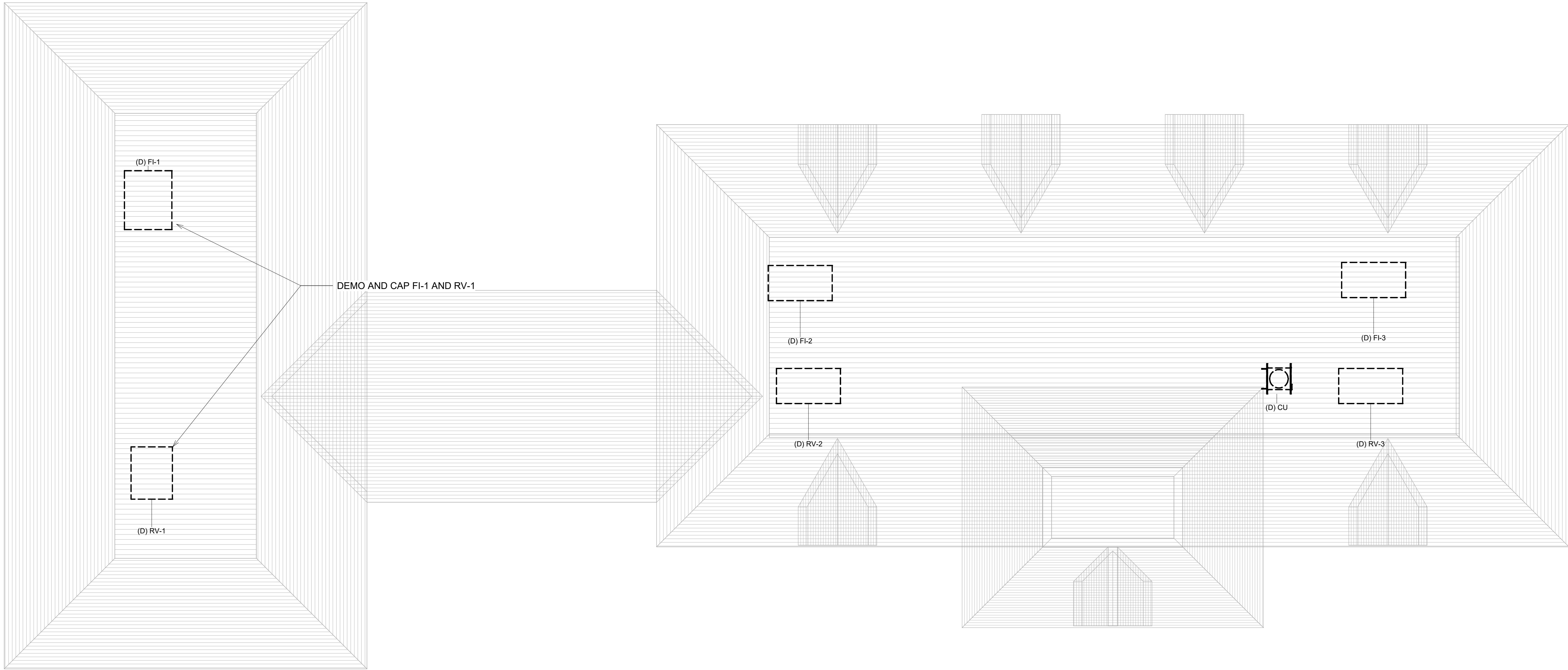
Issue Date:
09MAY22

Approved By:
AG

Drawn By:
AGE

Checked By:
AG

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① (D) ROOF PLAN
3/16" = 1'-0"

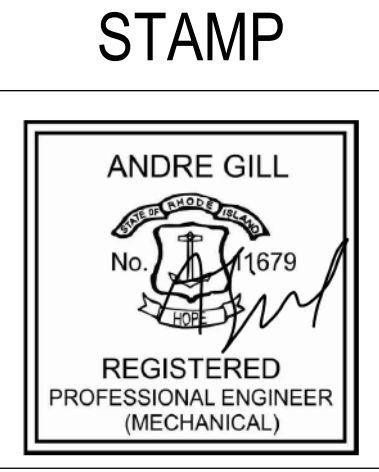
DEMO NOTES

- A. EXISTING CONDITIONS SHOWN ARE BASED ON AND NON-DESTRUCTIVE FILED INVESTIGATION. FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
B. PATCH PENETRATIONS THAT ARE NOT USED FOR NEW HVAC SYSTEM. COORDINATE WITH ARCHITECTURAL WORK.



ADDENDUM 3	10MAY22
ADDENDUM 2	26APR22
ADDENDUM 1	04APR22
ISSUE FOR BID	01MAR22
CLIENT REVIEW	21SEP21
Revision:	Date:

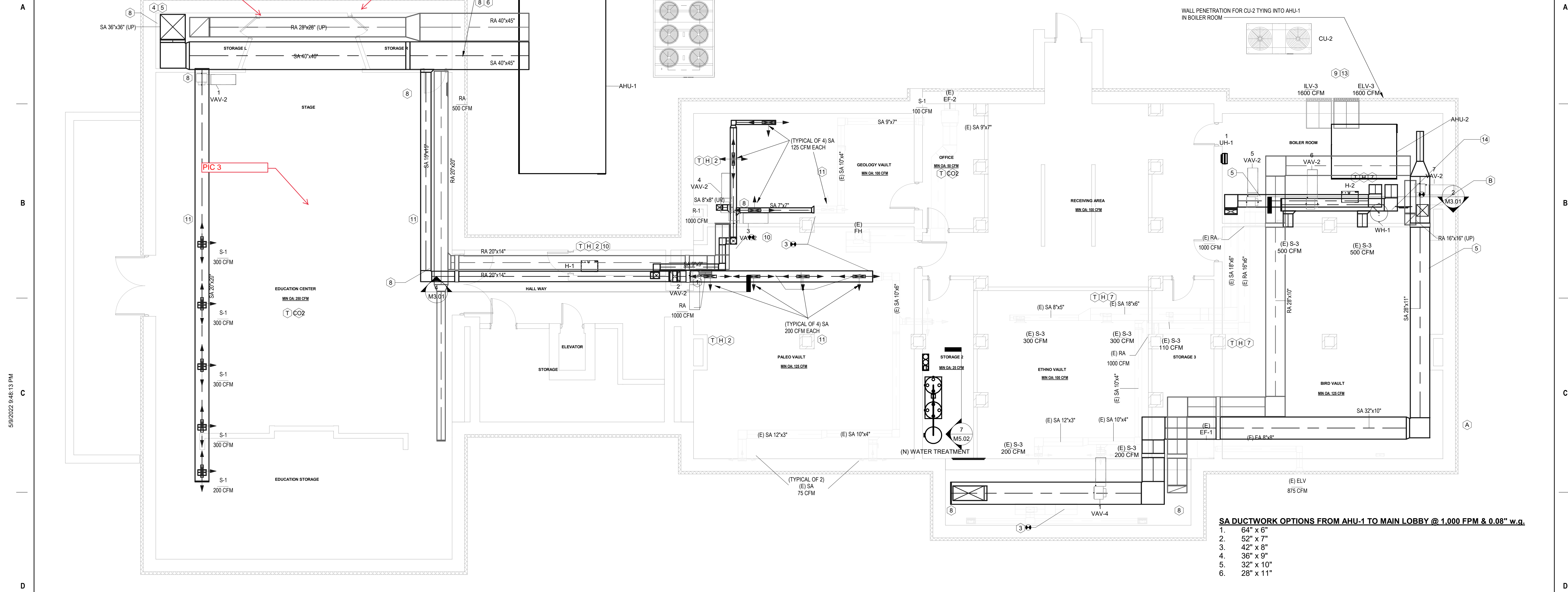
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MEP ENGINEER: Andre Gill Engineering, LLC 40 Overlea Road North Smithfield, RI 02896 T: 401.441.3414 W: www.andregillengineering.com	ARCHITECT: Saccoccio & Associates 1085 Park Ave Cranston, RI 02910 T: 401.942.7970 W: www.sa-architects.com



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Project Title: RWP MNH HVAC UPGRADE REBID		Project Number 2120	
Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale As indicated	
Drawing Title: (D) MECHANICAL PLANS (ROOF)		Drawing Number M1.04	
Issue Date: 09MAY22	Approved By: AG	Drawn By: AGE	Checked By: AG



1 (N) BASEMENT
3/16" = 1'-0"

M1.10 CALLOUT NOTES	
#	NOTE
1	REUSE EXISTING DUCTWORK IF POSSIBLE. CLEAN AND TEST PER SPECIFICATIONS AND SMACNA.
2	HUMIDIFICATION CONTROLLED BY H-1. INSTALL PER MANUFACTURERS DIRECTIONS. ROUTE TO NEAREST POTABLE WATER AND DRAIN.
3	TIE-IN POINT
4	CONTRACTOR TO COORDINATE WITH STRUCTURAL ENGINEER TO FINALIZE PENETRATION FOR SUPPLY/RETURN DUCTWORK
5	LOCATE DUCT SMOKES PER NFPA 90A AND WITHIN 5' OF EACH SIDE OF FIRE/SMOKE DAMPERS
6	CONTRACTOR TO COORDINATE DUCTWORK WITH ARCHITECTURAL DRAWINGS, STRUCTURAL AND FIRE ESCAPE.
7	HUMIDIFICATION CONTROLLED BY H-2. INSTALL PER MANUFACTURERS DIRECTIONS. ROUTE TO NEAREST POTABLE WATER AND DRAIN.
8	WALL OR FLOOR PENETRATION. INSTALL FIRE/SMOKE DAMPER AS REQUIRED.

M1.10 CALLOUT NOTES	
#	NOTE
9	ENSURE NEW LOUVERS DO NOT ENTRAIN RAIN OR SNOW INTO BUILDING. PROVIDE DRAINAGE PER MANUFACTURERS RECOMMENDATIONS.
10	DUCTWORK OFFSETS ARE SHOWN FOR PICTORIAL REPRESENTATION. CONTRACTOR TO FIELD ROUTE AS APPROPRIATE
11	INSTALL ALL AIR TERMINALS SHOWN IN AREA ON SIDE WALL OF DUCTS
12	EXACT LOCATION TO BE DETERMINED PRIOR TO CONSTRUCTION. BE SURE TO MAINTAIN ALL CLEARANCES REQ'.
13	RUN REFRIGERANT PIPING PER MANUFACTURERS RECOMMENDATIONS.
14	ROUTE INTAKE AND COMBUSTION EXHAUST DUCTWORK PER CODE.
A	MULTIPLE CONFIGURATIONS ARE AVAILABLE FOR DUCT SIZING TO ALLOW FOR FIELD INSTALLED ROUTING. 2,000 CFM MUST GET FROM BOILER ROOM TO MAIN LOBBY TIE-IN BY (D) AHU-7. ROUTING OPTION SHOWN WITH DIMENSIONS. MAX HEIGHT OF 8" IS AN OPTION GIVES WIDTH OF 42". SMACNA EQUIVILANT OPTIONS ARE APPROVED FOR ROUTING OPTIONS WHICH MINIMIZE CONSTRUCTION IMPACT.
B	INSTALL 1,250 CFM VAV

SHEET NOTES:

- MIN OA CFM SHOWN ARE CODE MINIMUM CFM DURING UNOCCUPIED MODES. CO2 SENSORS WILL RAMP OA BASED ON SPACE OCCUPANCY.
- ROUTE ALL CONDENSATE TO EXISTING DRAINS, REPLACING ALL DRAIN PIPING.
- SET CO2 SENSORS AT 800 PPM FOR OFFICES AND 1,000 PPM FOR ALL OTHER SPACES. SETTINGS CAN BE REDUCED BY ADDITIONAL 100 TO 200 PPM DURING HIGH OCCUPANCY EVENTS.

CONSULTANTS

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1085 Park Ave
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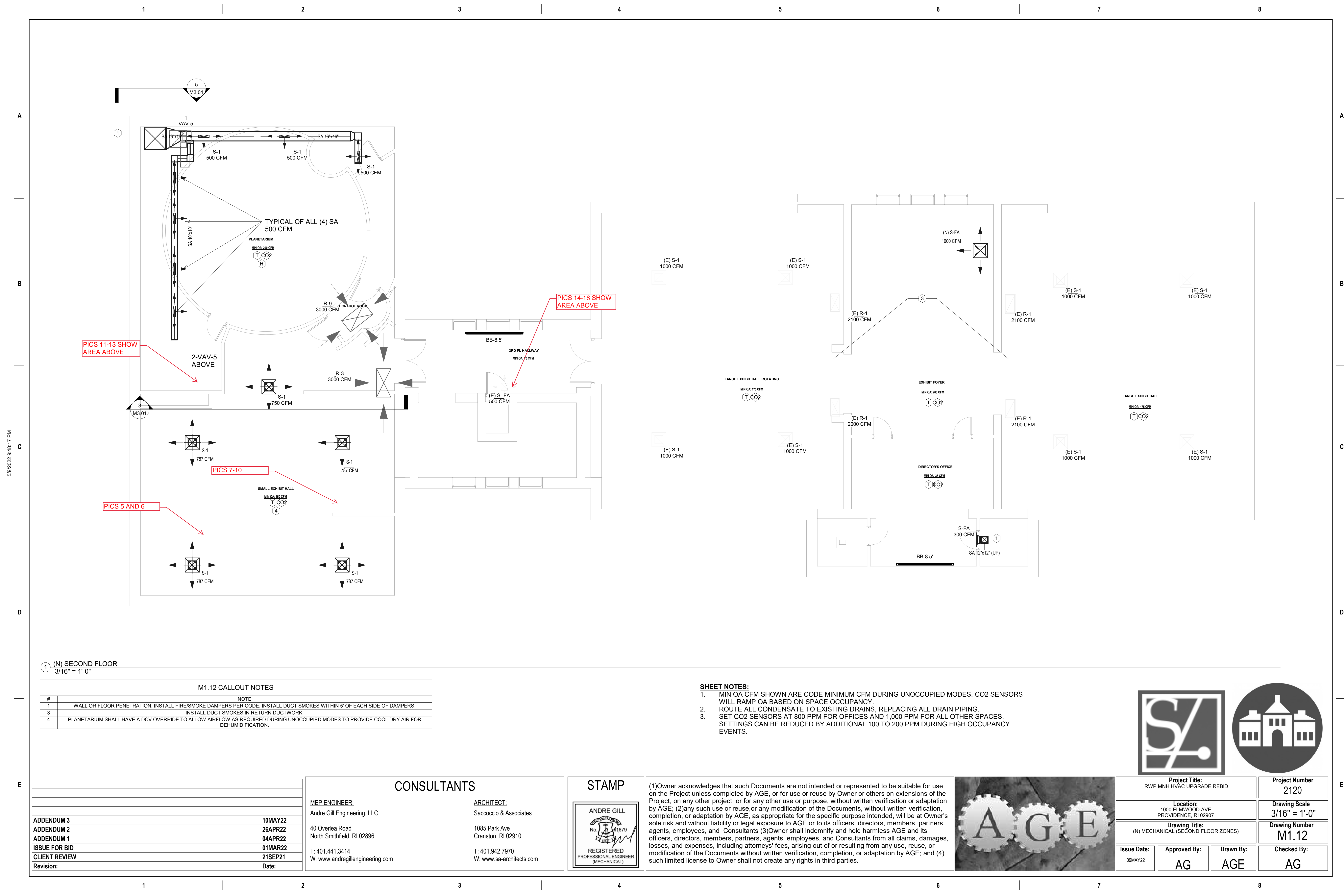
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Project Title: RWP MNH HVAC UPGRADE REBID		Project Number 2120	
Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale 3/16" = 1'-0"	
Drawing Title: (N) MECHANICAL PLANS BASEMENT		Drawing Number M1.10	
Issue Date: 09MAY22	Approved By: AG	Drawn By: AGE	Checked By: AG



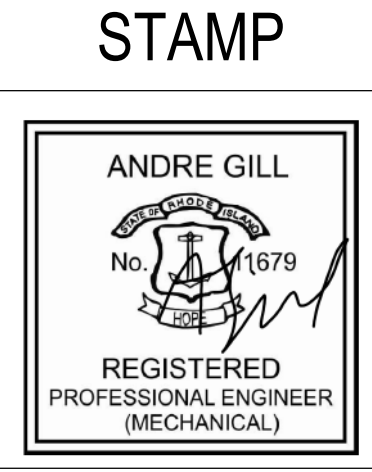
① (N) SECOND FLOOR
3/16" = 1'-0"

M1.12 CALLOUT NOTES	
#	NOTE
1	WALL OR FLOOR PENETRATION. INSTALL FIRE/SMOKE DAMPERS PER CODE. INSTALL DUCT SMOKE SENSORS WITHIN 5' OF EACH SIDE OF DAMPERS.
3	INSTALL DUCT SMOKE SENSORS IN RETURN DUCTWORK.
4	PLANETARIUM SHALL HAVE A DCV OVERRIDE TO ALLOW AIRFLOW AS REQUIRED DURING UNOCCUPIED MODES TO PROVIDE COOL DRY AIR FOR DEHUMIDIFICATION.

- SHEET NOTES:**
- MIN OA CFM SHOWN ARE CODE MINIMUM CFM DURING UNOCCUPIED MODES. CO2 SENSORS WILL RAMP OA BASED ON SPACE OCCUPANCY.
 - ROUTE ALL CONDENSATE TO EXISTING DRAINS, REPLACING ALL DRAIN PIPING.
 - SET CO2 SENSORS AT 800 PPM FOR OFFICES AND 1,000 PPM FOR ALL OTHER SPACES. SETTINGS CAN BE REDUCED BY ADDITIONAL 100 TO 200 PPM DURING HIGH OCCUPANCY EVENTS.

ADDENDUM 3	10MAY22
ADDENDUM 2	26APR22
ADDENDUM 1	04APR22
ISSUE FOR BID	01MAR22
CLIENT REVIEW	21SEP21
Revision:	Date:

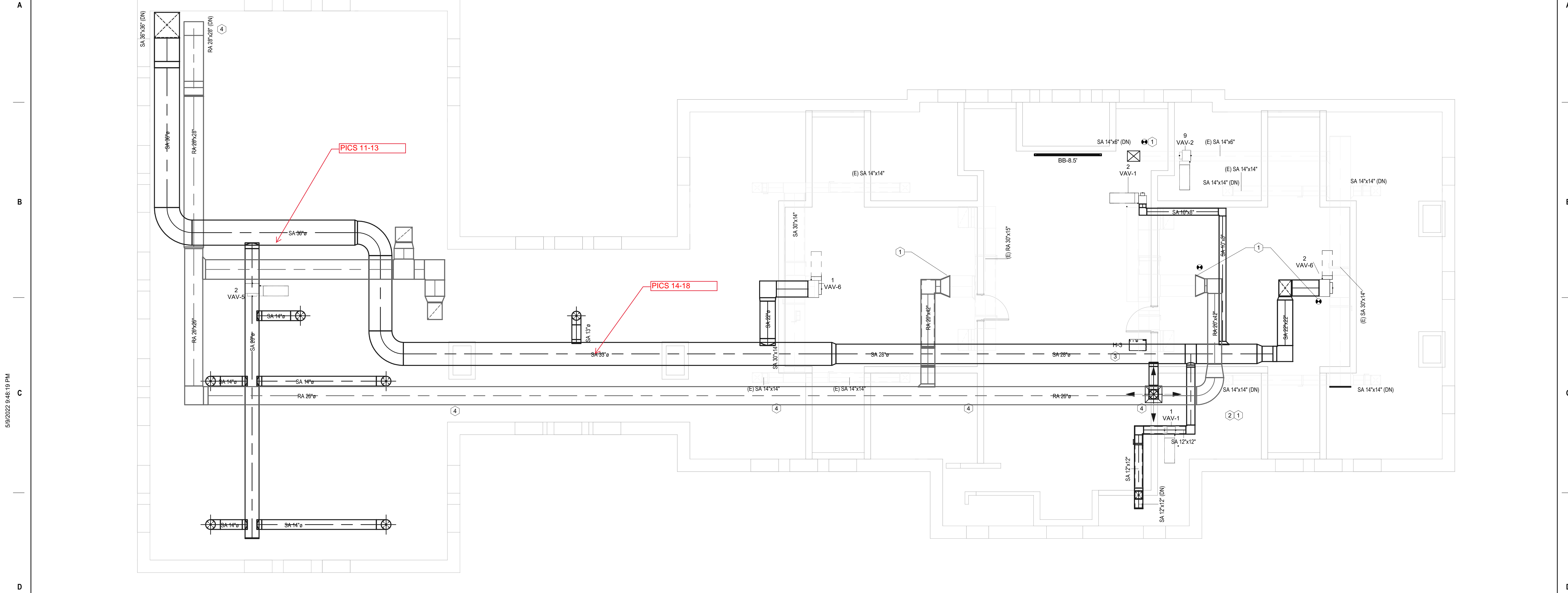
CONSULTANTS	
MEP ENGINEER: Andre Gill Engineering, LLC 40 Overlea Road North Smithfield, RI 02896 T: 401.441.3414 W: www.andregillengineering.com	ARCHITECT: Saccoccio & Associates 1085 Park Ave Cranston, RI 02910 T: 401.942.7970 W: www.sa-architects.com



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Project Title: RWP MNH HVAC UPGRADE REBID		Project Number 2120	
Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale 3/16" = 1'-0"	
Drawing Title: (N) MECHANICAL (SECOND FLOOR ZONES)		Drawing Number M1.12	
Issue Date: 09MAY22	Approved By: AG	Drawn By: AGE	Checked By: AG



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① (N) 3RD FLOOR
3/16" = 1'-0"

M1.13 CALLOUT NOTES	
#	NOTE
1	TIE-IN POINT TO EXISTING DUCTWORK.
2	SEPARATE DUCTWORK TO SUPPLY DIRECTLY TO DIRECTORS OFFICES.
3	HUMIDIFICATION CONTROLLED BY H-3. INSTALL PER MANUFACTURERS DIRECTIONS. ROUTE TO NEAREST POTABLE WATER AND DRAIN.
4	INSTALL FIRE DAMPER ARE REQUIRED PER CODE. INSTALL DUCT SMOKES WITHIN 5' OF EACH SIDE OF THE DAMPER

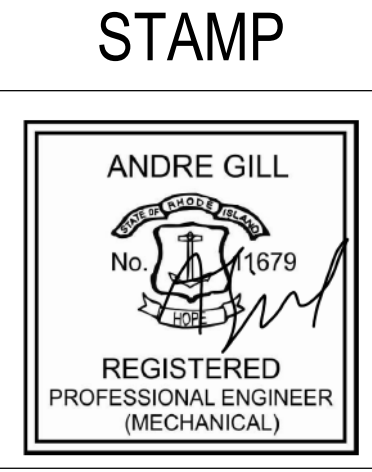
SHEET NOTES:

- MIN OA CFM SHOWN ARE CODE MINIMUM CFM DURING UNOCCUPIED MODES. CO2 SENSORS WILL RAMP OA BASED ON SPACE OCCUPANCY.
- ROUTE ALL CONDENSATE TO EXISTING DRAINS, REPLACING ALL DRAIN PIPING.
- SET CO2 SENSORS AT 800 PPM FOR OFFICES AND 1,000 PPM FOR ALL OTHER SPACES. SETTINGS CAN BE REDUCED BY ADDITIONAL 100 TO 200 PPM DURING HIGH OCCUPANCY EVENTS.



ADDENDUM 3	10MAY22
ADDENDUM 2	26APR22
ADDENDUM 1	04APR22
ISSUE FOR BID	01MAR22
CLIENT REVIEW	21SEP21
Revision:	Date:

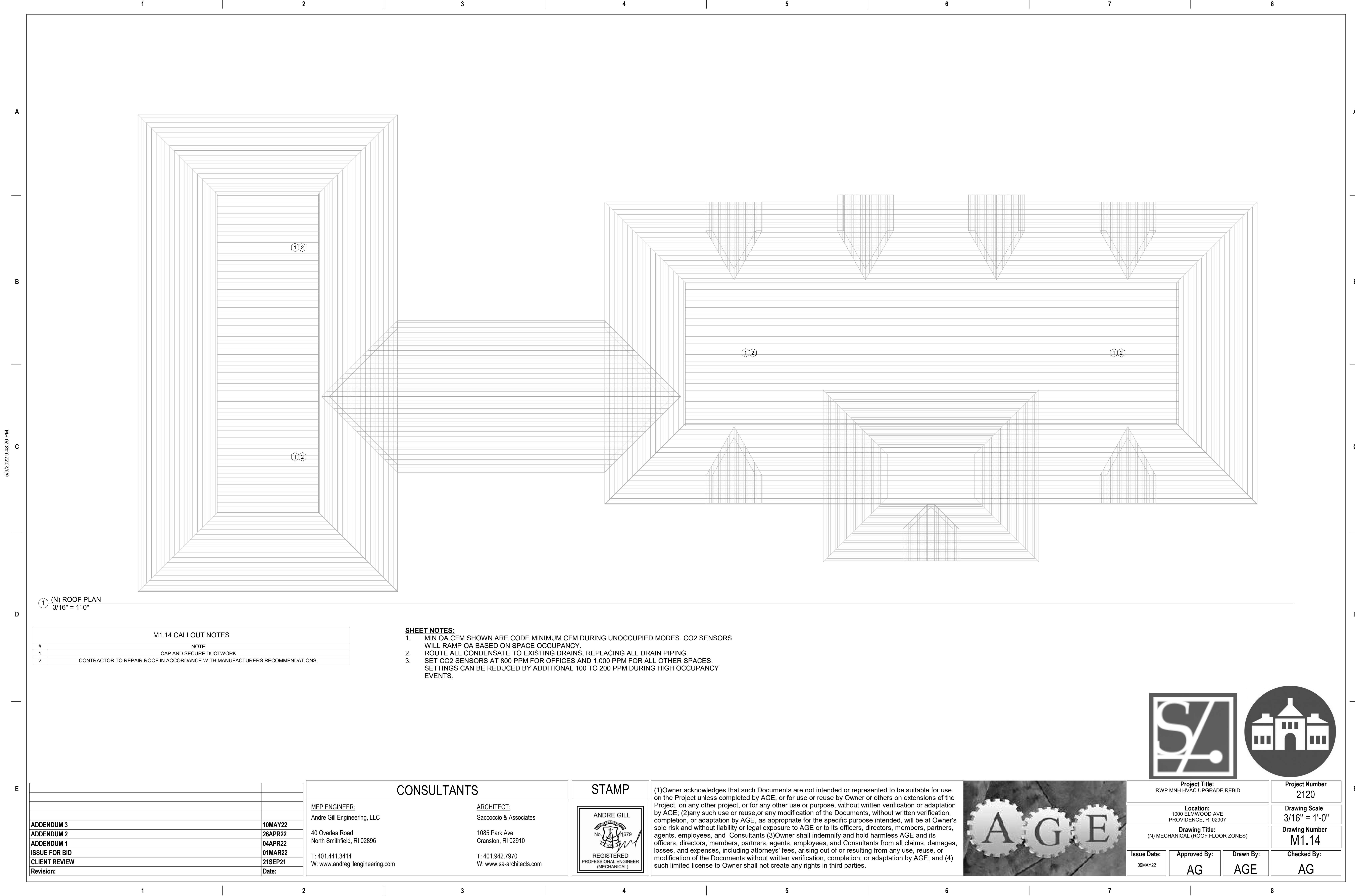
CONSULTANTS	
MEP ENGINEER: Andre Gill Engineering, LLC 40 Overlea Road North Smithfield, RI 02896 T: 401.441.3414 W: www.andregillengineering.com	ARCHITECT: Saccoccio & Associates 1085 Park Ave Cranston, RI 02910 T: 401.942.7970 W: www.sa-architects.com



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Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale 3/16" = 1'-0"	
Drawing Title: (N) MECHANICAL (THIRD FLOOR ZONES)		Drawing Number M1.13	
Issue Date: 09MAY22	Approved By: AG	Drawn By: AGE	Checked By: AG



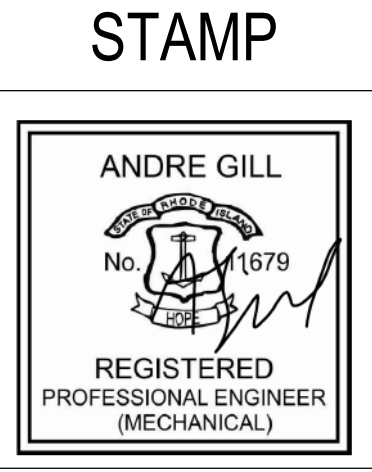
1 (N) ROOF PLAN
3/16" = 1'-0"

M1.14 CALLOUT NOTES	
#	NOTE
1	CAP AND SECURE DUCTWORK
2	CONTRACTOR TO REPAIR ROOF IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

- SHEET NOTES:**
- MIN OA CFM SHOWN ARE CODE MINIMUM CFM DURING UNOCCUPIED MODES. CO2 SENSORS WILL RAMP OA BASED ON SPACE OCCUPANCY.
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ADDENDUM 3	10MAY22
ADDENDUM 2	26APR22
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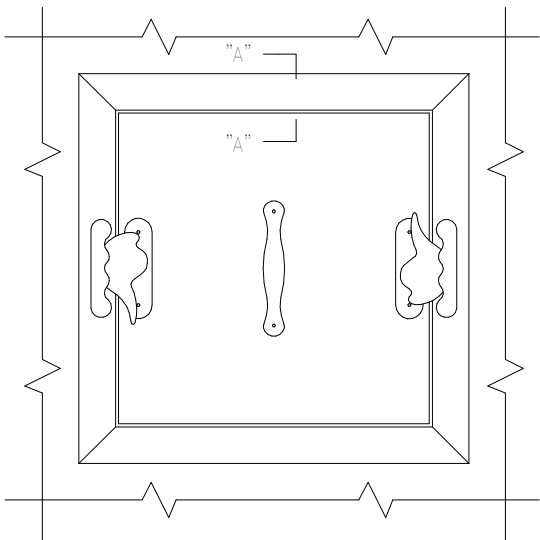


Project Title: RWP MNH HVAC UPGRADE REBID		Project Number 2120
Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale 3/16" = 1'-0"
Drawing Title: (N) MECHANICAL (ROOF FLOOR ZONES)		Drawing Number M1.14
Issue Date: 09MAY22	Approved By: AG	Drawn By: AGE

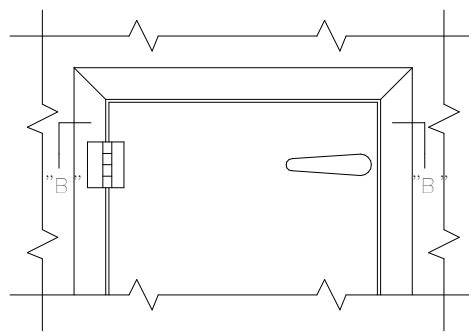
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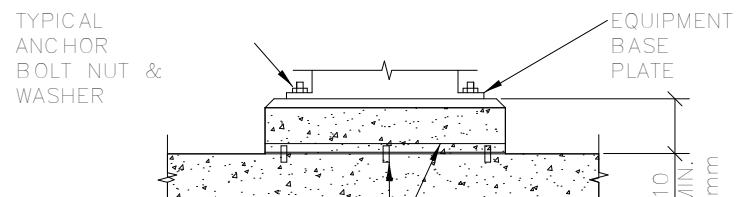
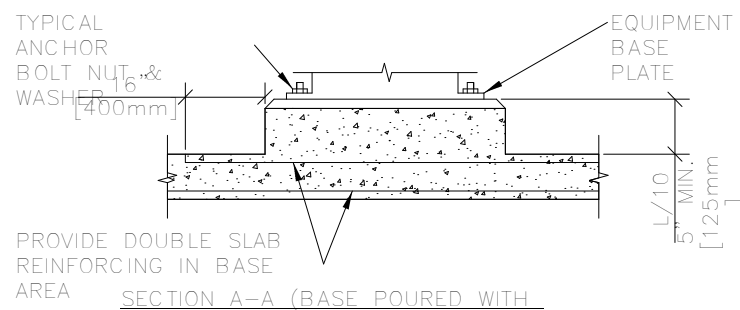
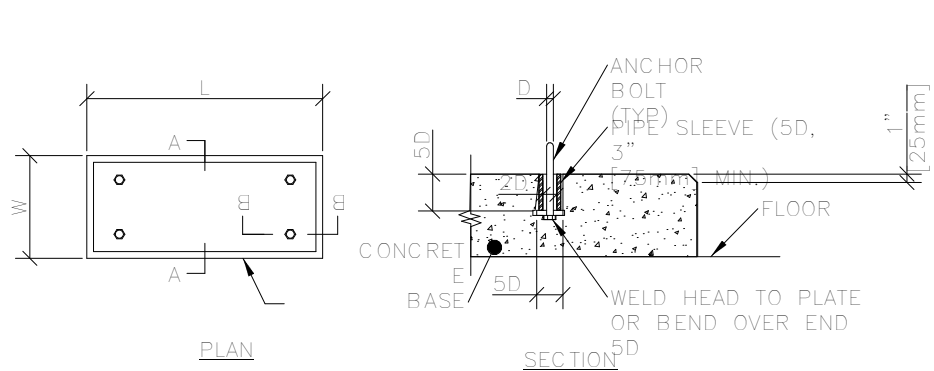
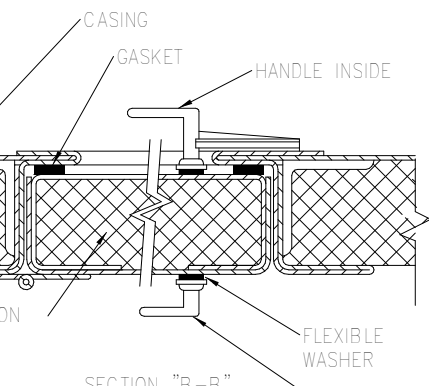


ACCESS PANEL

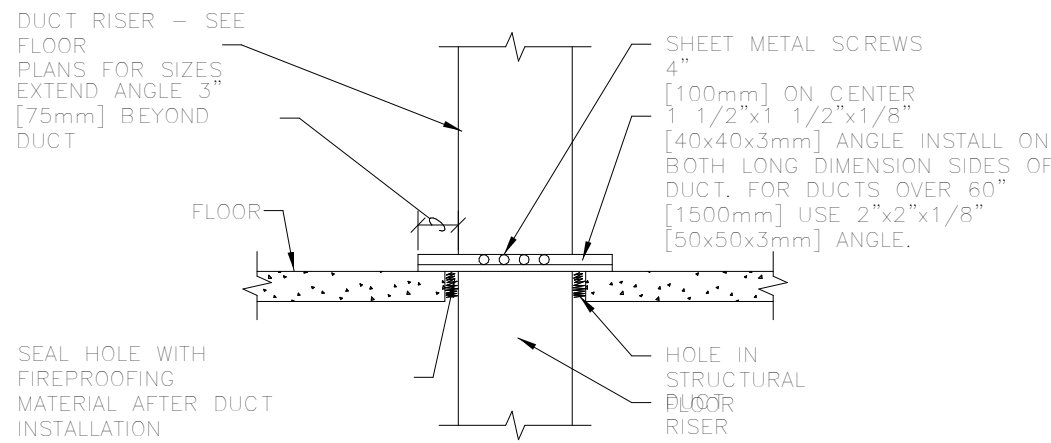


ACCESS DOOR

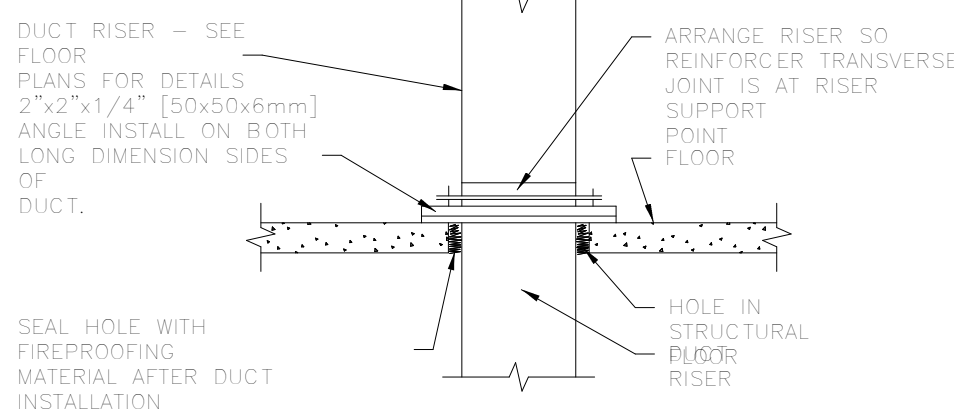
- NOTES:
1. LATCHES SHALL BE OF THE WEDGE TYPE TO CLOSE DOORS TIGHTLY.
 2. HINGES ON THE ACCESS DOORS SHALL HAVE NON-CORROSIVE PINS.
 3. SEE SHACNA 2005, FIGURE 9-15



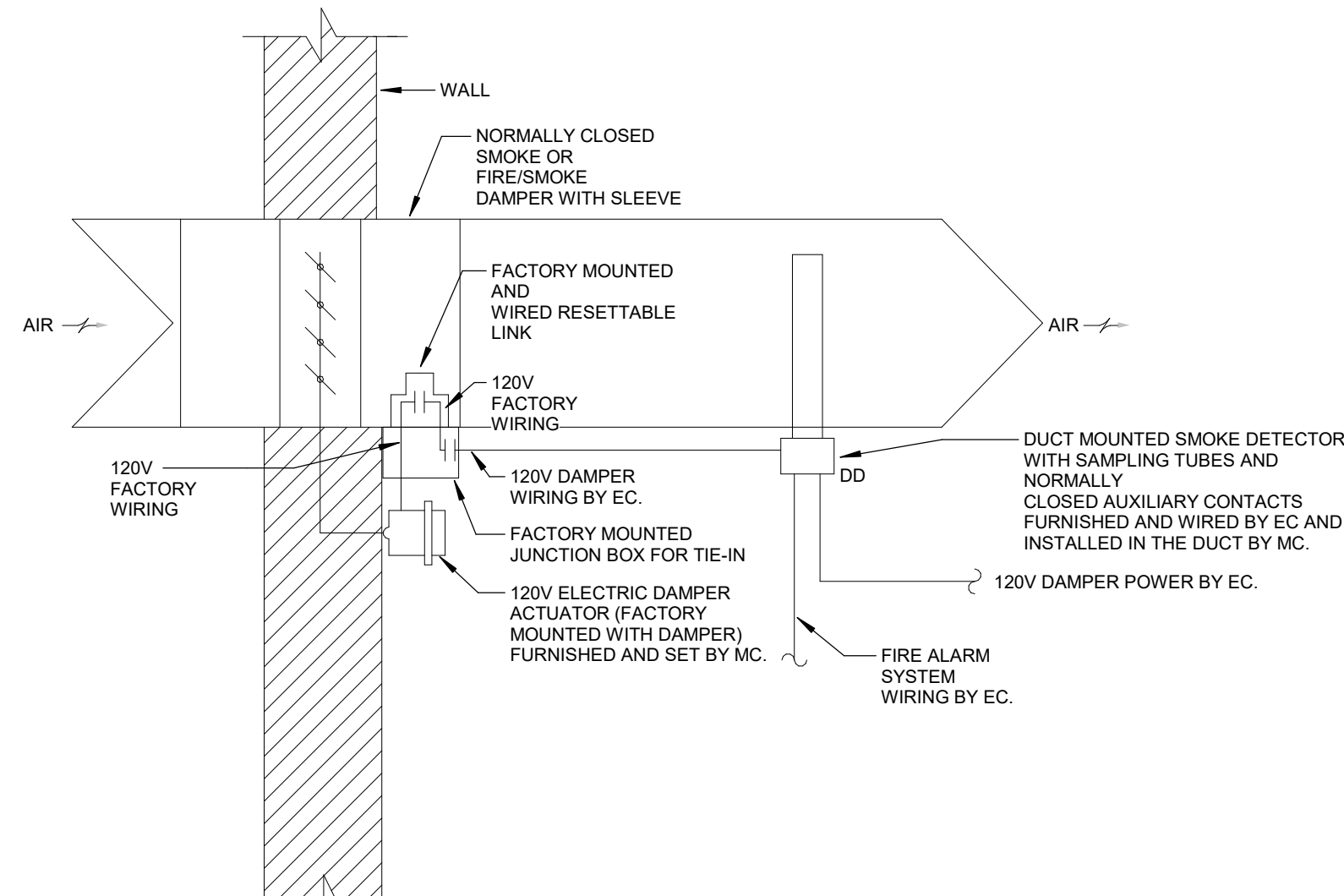
- NOTE:
- C & W DIMENSIONS SHALL BE 6" [150mm] GREATER THAN THE EQUIPMENT BASE PLATE.



DUCT RISER SUPPORTS



- NOTE:
- ALL DUCT WORK RISERS WHICH ARE RUN EXPOSED, SUCH AS THRU ATTIC FLOORS AND FAN ROOM FLOORS SHALL BE PROVIDED WITH A 3" [75mm] HIGH



SMOKE OR FIRE/SMOKE DAMPER CONTROL DIAGRAM (120V ELECTRIC DAMPER)1
12" = 1'-0"

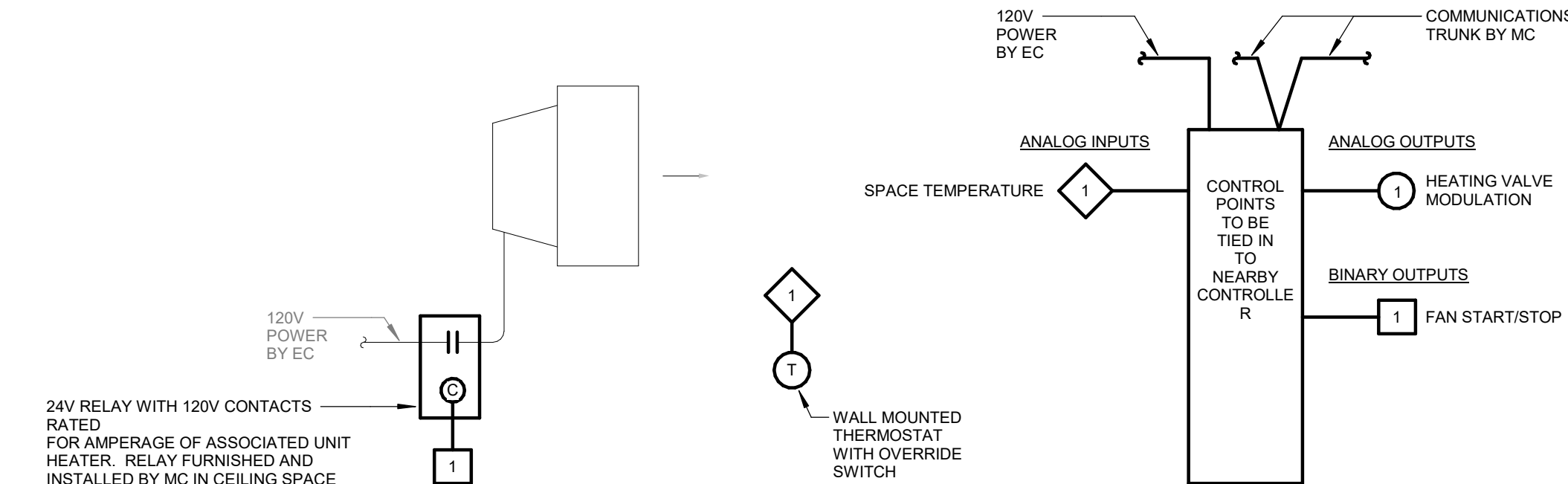
- SMOKE DAMPER SEQUENCE OF OPERATIONS:**
- THE DAMPER SHALL BE POWERED OPEN AND FAIL CLOSED.
- UPON DETECTION OF SMOKE BY THE DUCT MOUNTED SMOKE DETECTOR, THE DETECTOR SHALL INTERRUPT POWER AND CLOSE THE DAMPER.
- THE FIRE ALARM SYSTEM SHALL ALARM THE BAS TO SHUTDOWN THE ASSOCIATED AHU.
- UPON RISE IN AIRFLOW TEMPERATURE ABOVE 165 DEG F, THE RESETTABLE LINK SHALL INTERRUPT POWER AND CLOSE THE DAMPER. THE LINK SHALL BE RESETTABLE VIA PUSHBUTTON.

1 ACCESS PANEL AND DOOR DETAIL
3/8" = 1'-0"

2 CONCRETE EQUIPMENT BASES
3/8" = 1'-0"

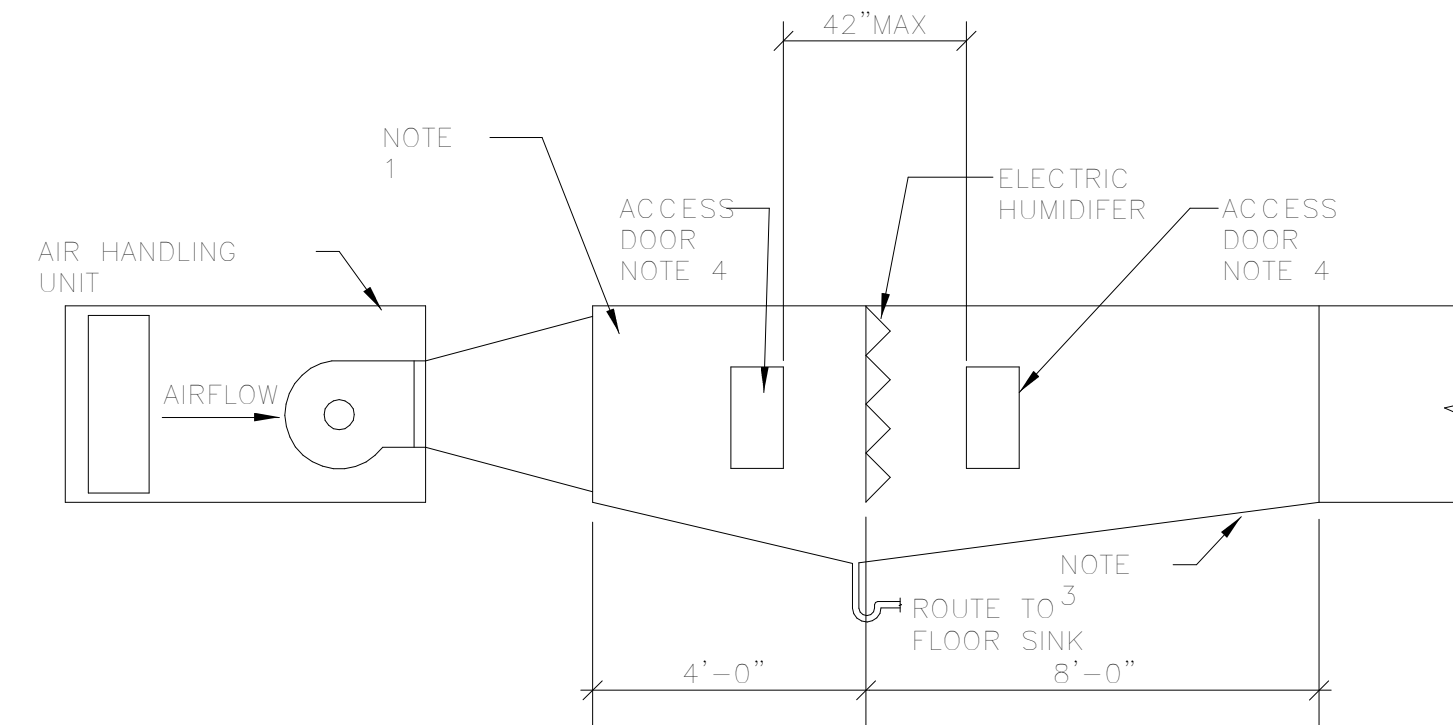
3 DUCT RISER SUPPORTS
3/8" = 1'-0"

4 SMOKE OR FIRE/SMOKE DAMPER CONTROL DIAGRAM (120V ELECTRIC DAMPER)1
12" = 1'-0"



5 UNIT HEATER CONTROL DIAGRAM
ELECTRIC
12" = 1'-0"

- UNIT HEATER SEQUENCE OF OPERATIONS:**
- THE UNIT HEATER FAN SHALL CYCLE AND THE NORMALLY OPEN MODULATE TO MAINTAIN SPACE SETPOINT, 60 DEG. F. (ADJUSTABLE) THE CONTROL VALVE SHALL BE CLOSED WHENEVER THE OUTSIDE AIR IS ABOVE 60 DEG. F.

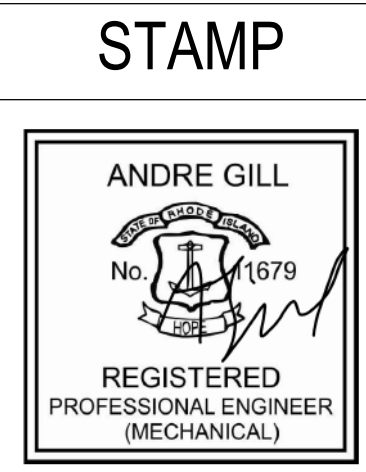


- NOTES:
1. TRANSITION WELDED STAINLESS STEEL 4" UPSTREAM OF HUMIDIFIER AND 8" DOWNSTREAM OF HUMIDIFIER.
 2. DETAIL ONLY APPLICABLE TO AHU'S WITHOUT AFTER FILTER DOWNSTREAM OF THE SUPPLY AIR FAN.
 3. INTEGRAL STAINLESS STEEL DRAIN PAN SLOPE FROM ALL DIRECTIONS TO DRAIN CONNECTION. SLOPE 1/8" PER 1'-0"
 4. PROVIDE MIN. 18" WIDE ACCESS DOOR, DIRECTLY UPSTREAM AND DOWNSTREAM OF HUMIDIFIER.

6 DUCT MOUNTED HUMIDIFIER
1/2" = 1'-0"

ADDENDUM 3	10MAY22
ADDENDUM 2	26APR22
ADDENDUM 1	04APR22
ISSUE FOR BID	01MAR22
Revision:	Date:

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Project Title: RWP MNH HVAC UPGRADE REBID		Project Number 2120
Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale As indicated
Drawing Title: MECHANICAL DETAILS		Drawing Number M5.01
Issue Date: 09MAY22	Approved By: AG	Drawn By: AGE
		Checked By: AG

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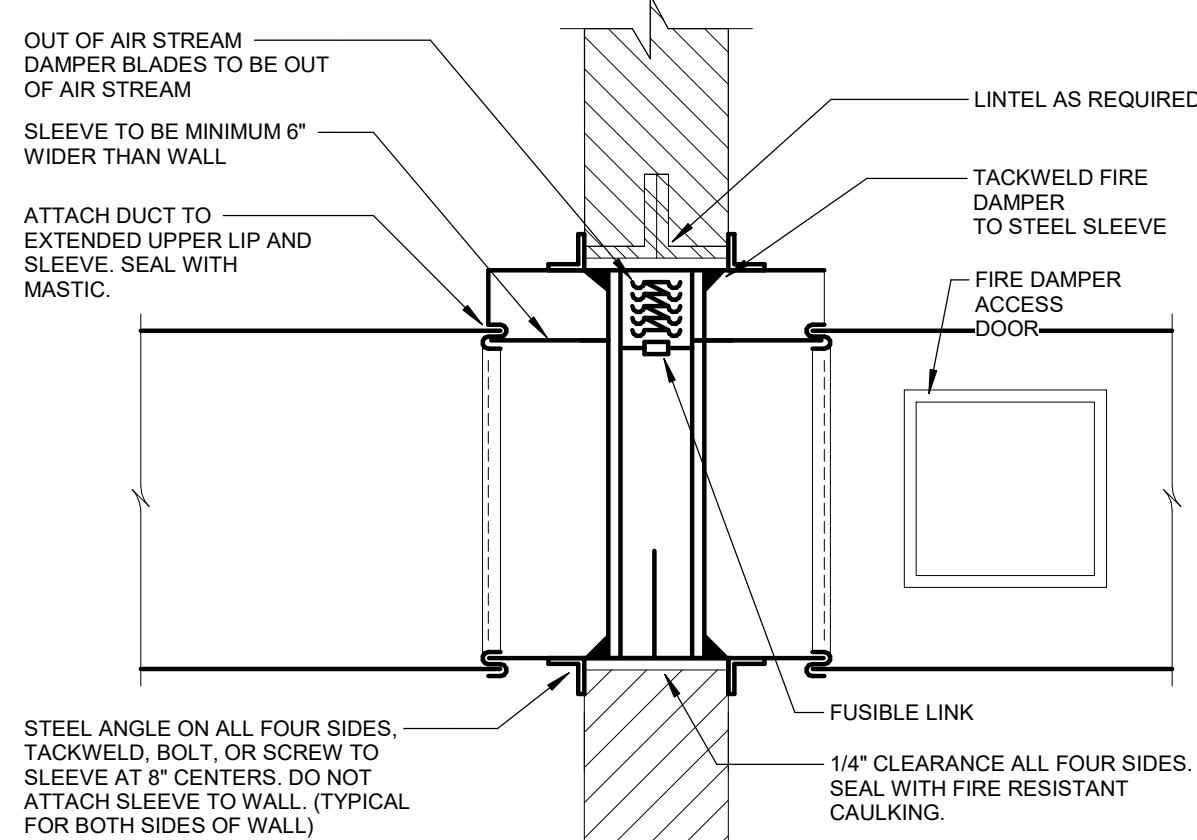
A

B

C

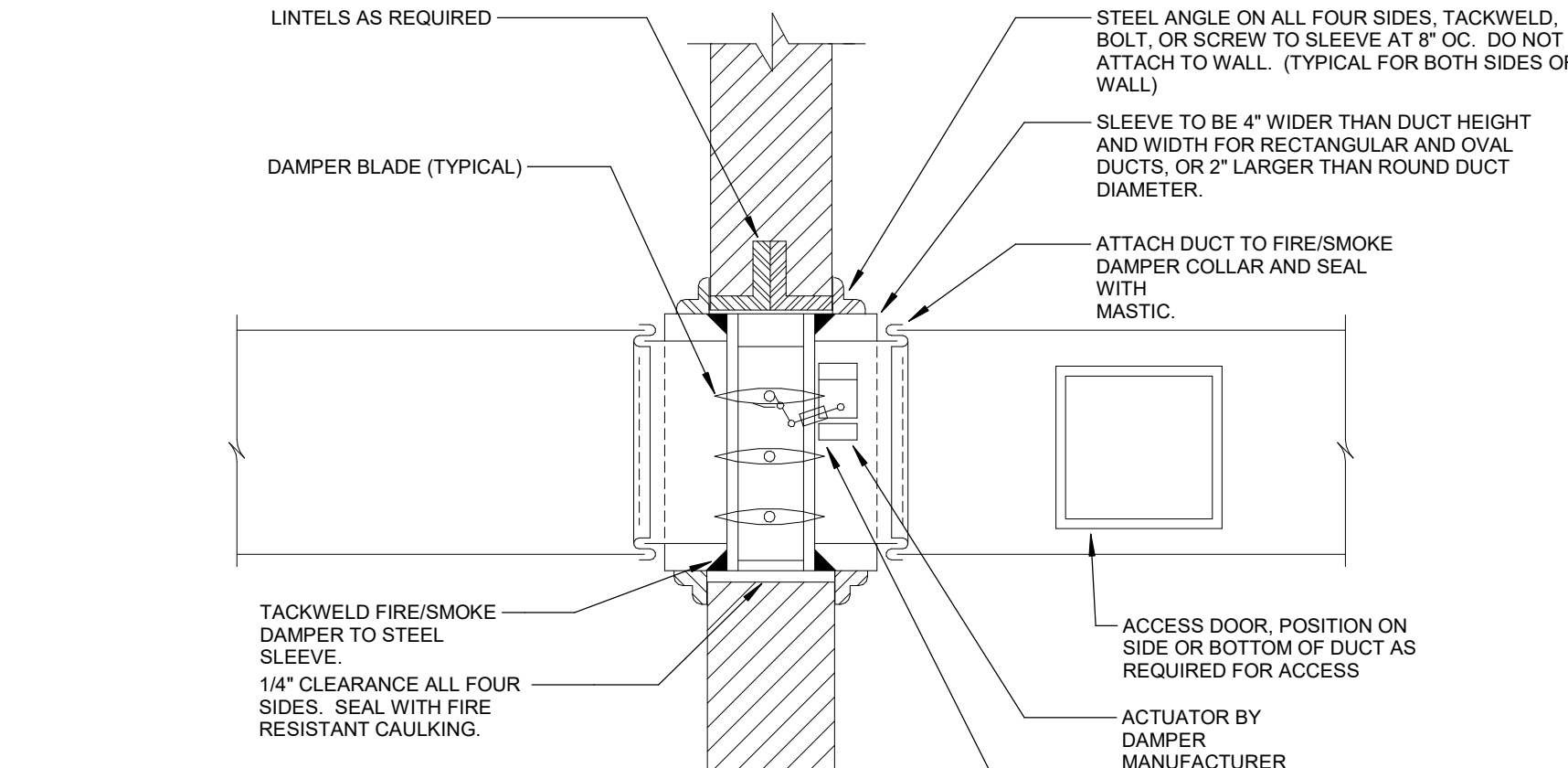
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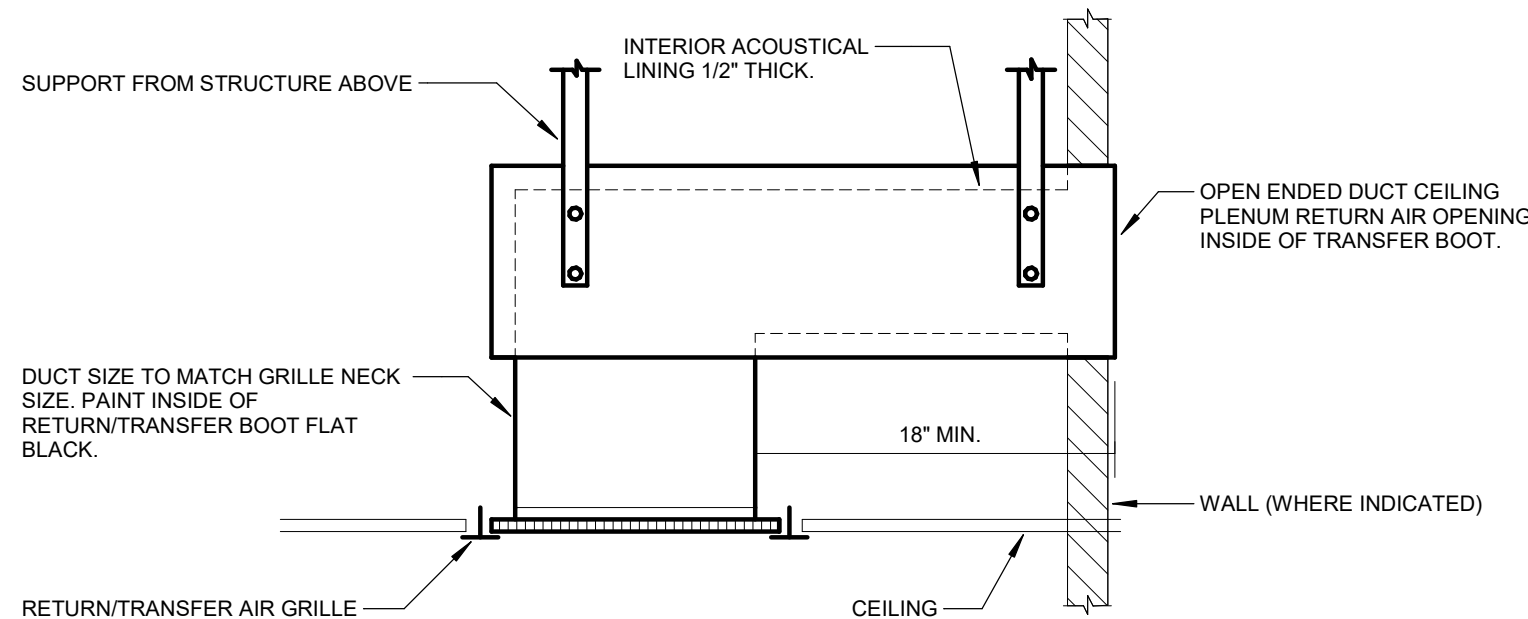
NOTES:
FIRE DAMPERS TO BE U.L. LABELED. THIS DETAIL ILLUSTRATES GENERAL REQUIREMENTS ONLY. THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND DETAILS (AS TESTED AND APPROVED BY U.L.) MUST BE USED FOR THE ACTUAL INSTALLATION.

① Z - VERTICAL FIRE DAMPER DETAIL
12" = 1'-0"

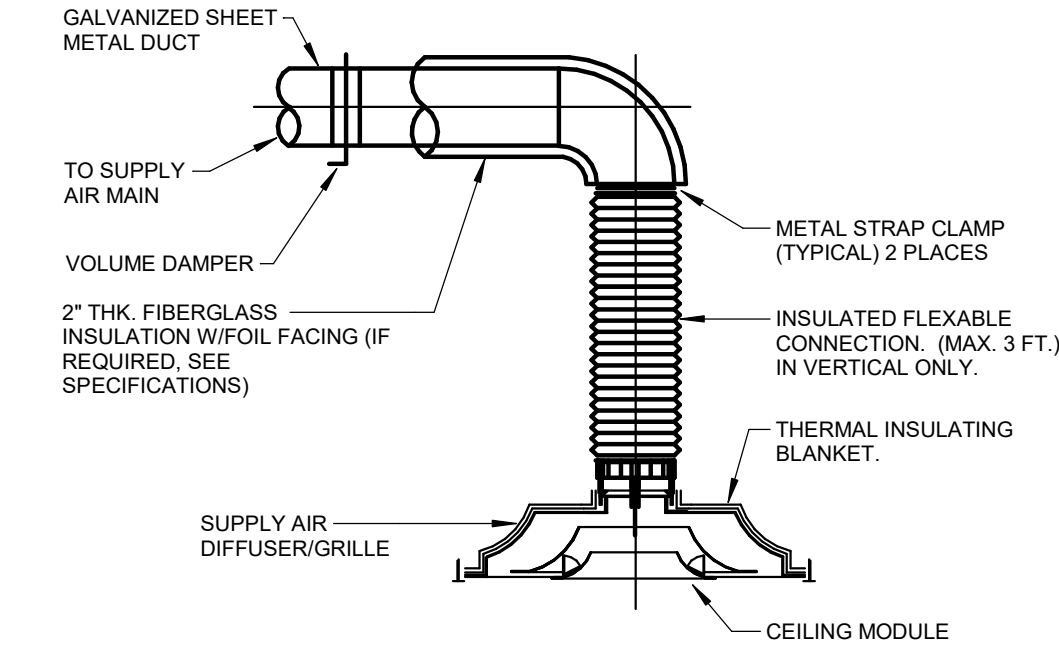


NOTES:
FIRE/SMOKE DAMPERS TO BE U.L. LABELED. THIS DETAIL ILLUSTRATES GENERAL REQUIREMENTS ONLY. THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND DETAILS (AS TESTED AND APPROVED BY U.L.) MUST BE USED FOR THE ACTUAL INSTALLATION.

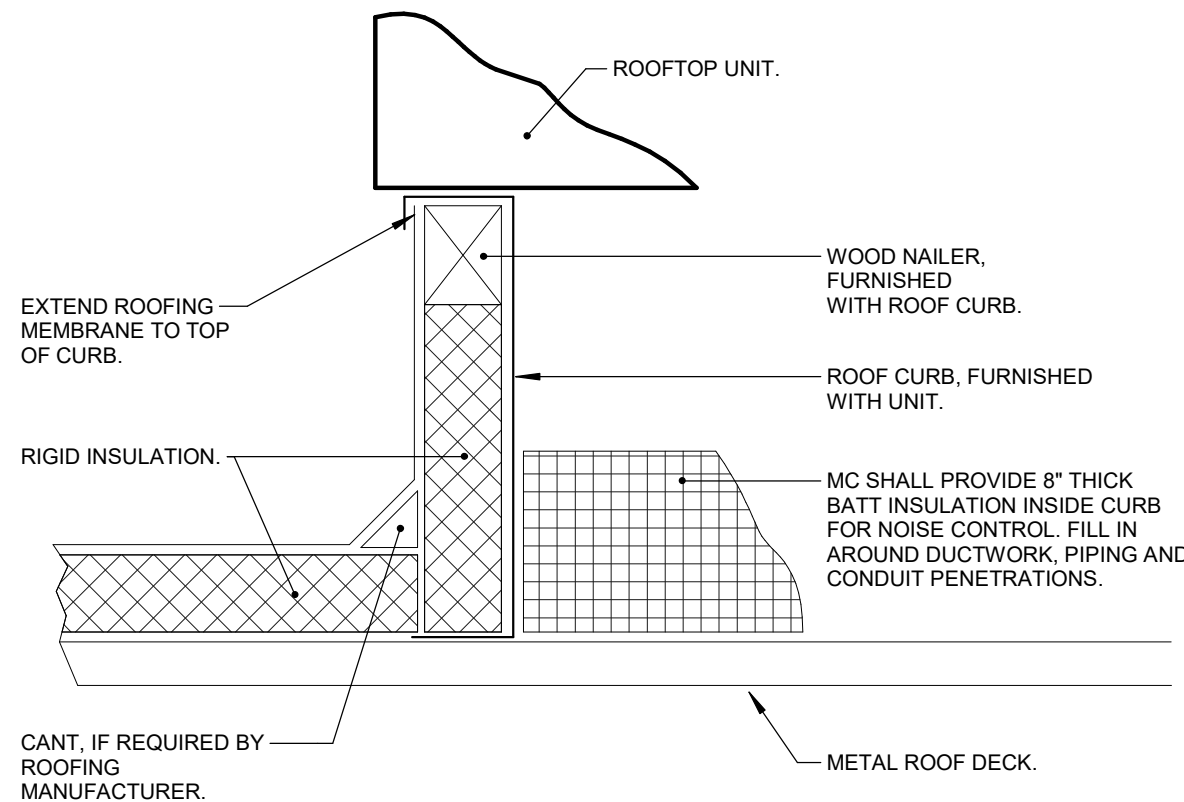
② Z - VERTICAL FIRE/SMOKE DAMPER DETAIL
12" = 1'-0"



⑧ Z - RETURN/TRANSFER AIR BOOT DETAIL 1
12" = 1'-0"



③ Z - SUPPLY AIR DIFFUSER DETAIL
12" = 1'-0"

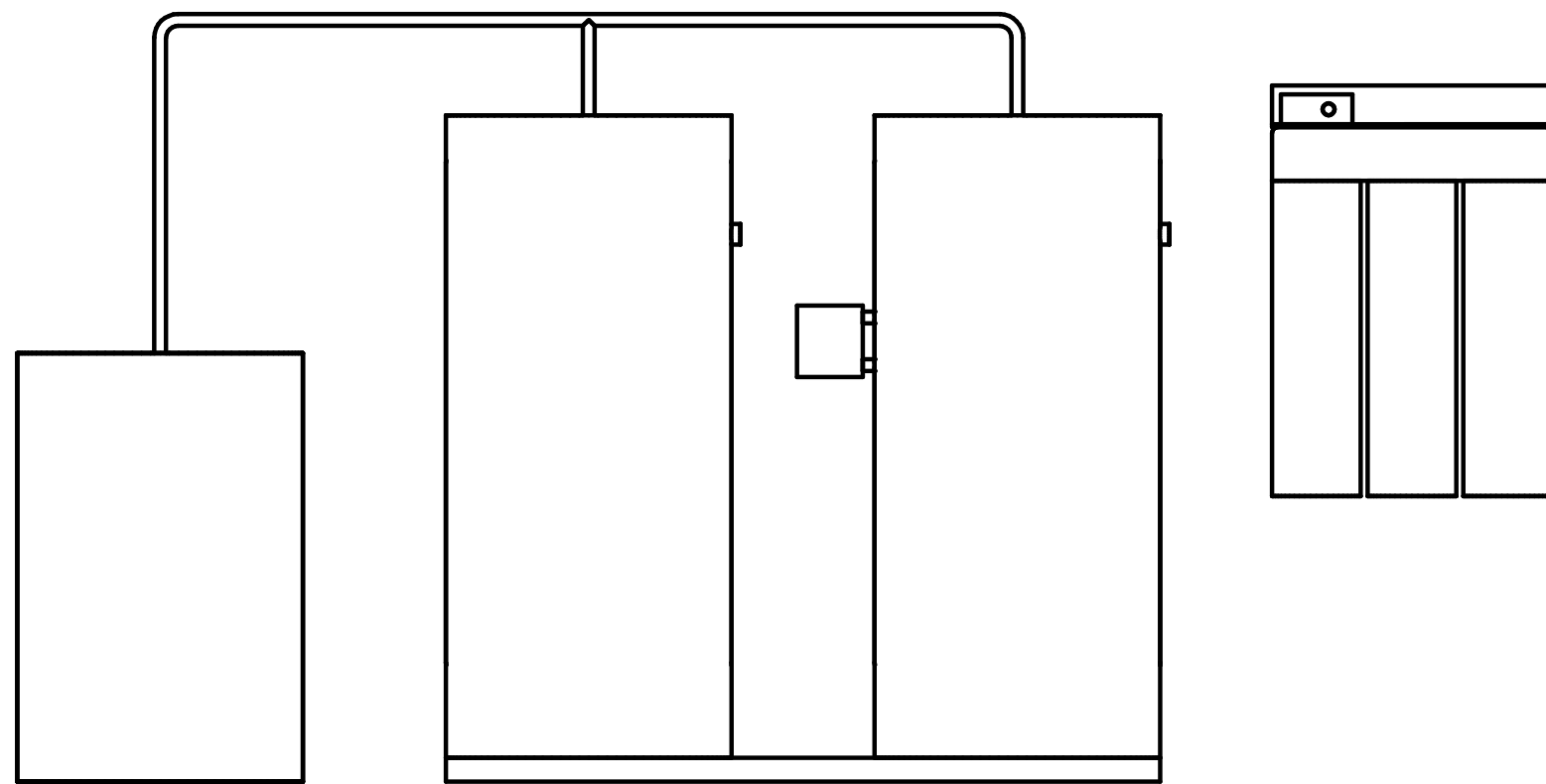


NOTE:
1. ROOF CURB SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR. MECHANICAL CONTRACTOR SHALL LOCATE ROOF OPENING AND ROOF CURB POSITION. GENERAL CONTRACTOR SHALL PROVIDE ROOF OPENING, INSTALL ROOF CURB (FASTEN TO ROOF DECK) AND INCORPORATE CURB INTO ROOFING SYSTEM.
2. REFER TO ARCHITECTNOTES FOR EPDM ROOFING SYSTEM CONNECTIONS

④ Z - ROOFTOP AIR HANDLING UNIT CURB DETAIL 1
12" = 1'-0"

(N) WATER TREATMENT

(N) PRE-FILTER



⑦ Section WATER TREATMENT
3/4" = 1'-0"

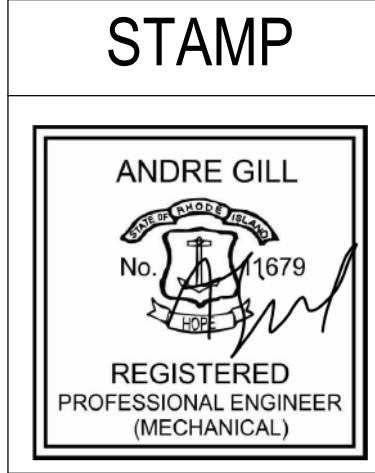
WATER TREATMENT NOTES:

- CONTRACTOR TO PERFORM WATER ANALYSIS AND PROVIDE RESULTS TO ENGINEER OF RECORD AFTER AWARD OF PROJECT. THE FINAL SIZING OF EQUIPMENT AND MEDIA IS SUBJECT TO CHANGE PENDING THOSE RESULTS.
- CONTRACTOR TO PURCHASE AND INSTALL EQUIVILANT COMMERCIAL GRADE MEDIA FILTER OR EQUIVILANT APPROVED BY ENGINEER OF RECORD (AGE) ANDRE GILL ENGINEERING, LLC FOR FLOWS UPTO 100 GPM
 - FRP TANKS, 11V/1PH/60HZ POWER, AUTOMATIC BACKWASH VALVE
 - TOP MOUNTED FLECK VALVE, TIME CONTROLLER TO LIMIT BACKWASH FLOW
 - DUPLEX SYSTEM, VACUUM BREAKER, PRESSURE RELIEF VALVE, INLET/ OUTLET SAMPLE VALVES, INLET/OUTLET PRESSURE GAUGES, DIFFERENTIAL PRESSURE SWITCH AND GAUGE.
 - FILTERS USING DIAPHRAGM VALVES
 - PRE-FILTERS 30 MICRON AND 10 MICRON IN SERIES PRIOR TO MEDIA FILTER.
 - MEDIAS TO INCLUDE
 - MANGANESE GREEN SAND
 - ACTIVATED CARBON
 - EQUIVILANT MANUFACTURER PURE AQUA, INC
 - MODEL 58F11645AC AND 58F1645GS IN SERIES
 - MIN FLOW 9.7 GPM
 - AVG FLOW 13.9 GPM
 - PEAK FLOW 16.7 GPM
 - TANK SIZE 16"x 65" 4.5 FT3
 - 1.25" INLET AND 1.5" OUTLET
 - WEIGHT 473 POUNDS



ADDENDUM 3	10MAY22
ADDENDUM 2	26APR22
ADDENDUM 1	04APR22
ISSUE FOR BID	01MAR22
CLIENT REVIEW	21SEP21
Revision:	Date:

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Project Title: RWP MNH HVAC UPGRADE REBID		Project Number 2120	
Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale As indicated	
Drawing Title: MECHANICAL DETAILS		Drawing Number M5.02	
Issue Date: 09MAY22	Approved By: AG	Drawn By: AGE	Checked By: AG

A

B

C

D

E

1

2

3

4

5

6

7

8

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CONDENSING UNITS (CU-X)

MARK	MANUFACTURER	COOLING (BTU/HR)	HEATING (BTU/HR)	DESIGN OUTDOOR TEMP DB (F)	HEATING OUTDOOR TEMP WB (F)	EER	INVERTER DRIVEN COMPRESSOR TYPE/ QUANTITY	SOUND PRESSURE (DBA)	COP	CONNECTED CAPACITY	RFS	MCA (A)	MOCP (A)	ELECTRIC AL SUPPLY (V/PH/HZ)	WEIGHT (LBS)	Comments
CU-1	Trane	786,870	N/A			11.2				60 TON		120	125	460/60/3	3,462	
CU-2	Trane	300,000	N/A			12				25 TON	60	49	49	460/60/3	857	

SEE CUTSHEETS FOR FULL SPECIFICATIONS.

WATER FILTER

MARK	MANUFACTURER	MODEL	NUMBER OF TANKS	MIN # OF GRAINS	MAX # OF GRAINS	FLOW MIN (GPM)	FLOW (GPM)	FLOW MAX (GPM)	TANK SIZE (D" X H")	TANK SIZE BRINE (D" X H")	ELECTRICAL SUPPLY (V/PH/HZ)	WEIGHT (LBS)	NOTES
(N) WATER TREATMENT	PURE AQUA, INC	MF-400	2			9.7	13.9	16.7	16" X 65"		115/ 1 /60	196/ 473	1, 2, 3

1. TANK 1 58F1645AC IS AN ACTIVATED CARBON SAND TO IMPROVE TASTE, ODOR AND REMOVE COLOR WITH GRAIN CAPACITY TO BE DETERMINED BASED ON MANUFACTURER

2. TANK 2 58F1645GS IS A GREENSAND FILTER TO REDUCE FE, MN AND H2S REDUCTION WITH GRAIN CAPACITY TO BE DETERMINED BASED ON MANUFACTURER

3. THE INFORMATION IN THE SCHEDULE IS PER TANK, WITH BRINE CAPACITIES TO BE DETERMINED

4. ROUTE ALL WASTE TO FLOOR DRAINS. CAPACITIES TO BE CONFIRMED AS WASTE MAY NEED TO BE PUMPED TO ADEQUATELY SIZED DRAIN.

UNIT HEATER (UH #)

MARK	Type Mark	MANUFACTURER	MODEL	BTU/HR	VOLTAGE	NUMBER OF POLES	KW	NOTES
1	UH-1	MODINE	VE 75	25,600	208	3	7.5	

WATER HEATER SCHEDULE (WH-#)

Mark	MANUFACTURER	MODEL	KW	FIRST HOUR RATING (GAL)	NOMINAL CAPACITY (GAL)	STORAGE VOL (GAL)	UEF	VOLTAGE	WARRANTY (YRS)
WH-1	AO SMITH	FPTU-80	4.5	84	80	82	3.45	208	6

HUMIDIFIER SCHEDULE (H-#)

Mark	MANUFACTURER	MODEL	LBS/HR	GALS/ HR	ELECTRICAL SUPPLY (V/PH/HZ)	FLA	KW
H-1	DRISTEEM	VAPORMIST	12		208/ 1/ 60	19.2	4
H-2	DRISTEEM	VAPORMIST	12		208/ 1/ 60	19.2	4
H-3	DRISTEEM	VAPORMIST	12		208/ 1/ 60	19.2	4

1. DRISTEEM VAPORMIST HUMIDIFIER DOES NOT REQUIRE WATER TREATMENT. IF CONTRACTOR SELECTS ALTERNATIVE, SUBMIT TO ENGINEER FOR APPROVAL WITH EQUIVILANCY STATEMENT.

ELECTRIC BASEBOARD HEATER (BB- LENGTH)

MARK	MANUFACTURER	BTU/HR	APPARENT LOAD	HEATER LENGTH	NUMBER OF POLES	FLA	VOLTAGE	NOTES
BB-2.5'	QMARK	1,706	500	2'6"	2	2.4	208	1, 2, 3
BB-4'	QMARK	3,413	1,000	4'	2	4.8	208	1, 2, 3
BB-8.5'	QMARK	8,533	2,500	8'6"		12.0	208	

1. INSTALL TAMPER RESISTANT THERMOSTAT

2. INSTALL TRANSFER SWITCH AS APPLICABLE

3. CONTRACTOR SHALL PROVIDE COMPLETE INSTALLATION

EXHAUST FAN (EF-#)

TYPE MARK	MARK	MANUFACTURER	CFM RANGE	FREQUENCY (HZ)	PHASE	VOLTAGE	EXTERNAL STATIC	HP	RPM	WATTS	NOTES
EF-1		Loren Cook Company	100-500				0.050	1/20	1075	57	

1. PROPELLER WALL FAN WIRE GUARD

2. SHUTTER GUARD

3. EXTENDED MOUNTING FLANGE

4. PROPELLER WALL FAN WALL COLLAR

5. KNOCKDOWN WEATHER HOOD

6. SHUTTER DISCHARGE

7. WEATHER HOOD

8. NEMA 1 (LOCKABLE): INDOOR GENERAL PURPOSE DISCONNECT

9. DIRECT DRIVE

10. ODP

11. VARI-FLOW EC DIRECT DRIVE

SCHEDULE NOTES:

1. ALL EQUIPMENT SHOWN WAS UTILIZED AS BASIS OF DESIGN EQUIPMENT.

2. CONTRACTORS ARE ALLOWED TO DEVIATE FROM THIS EQUIPMENT LISTED, IF EQUIVILANCY AND COMPLAINE WITH SPECIFICATIONS IS DEMONSTRATED AND APPROVED ENGINEER OF RECORD VIA SUBMITTAL PROCESS THROUGH ARCHITECT OF RECORD PRIOR TO PURCHASE. EQUIPMENT THAT IS PURCHASED WITHOUT APPROVED SHALL NOT BE REIMBURSED.

3. CONTRACTORS SHALL COMPLY WITH BID DOCUMENTS AND ARCHITECTURAL DOCUMENTS THAT MAY BE MORE STRINGENT THEN THESE NOTES.

AIR HANDLING UNIT SCHEDULE (AHU-X)

MARK	MANUFACTURER	MODEL	SUPPLY (CFM)	EXTERNAL STATIC	OA (CFM)	RETURN (CFM)	TOTAL STATIC (" w.g)	MCA (A)	MOCP (A)	MOP (A)	HP	ELECTRICAL SUPPLY (V/PH/HZ)	COOLING ENERGY FROM COIL (BTU/HR)	HEAT CAPACITY OUTPUT (MBH)	WEIGHT (LBS)	Schedule
AHU-1	TRANE	CSAA050	23,067	3.00	6,000	23,067	4.689	183.38	200	200	26.4	460/3/60	720,000	497.810	9,242	AHU
AHU-2	TRANE	UCCAA17	6,133	2.903	3,200	6,133	2.903	85	90	90	15	460/3/60	183,990	201,490	1,538	AHU

1. SEE CUTSHEETS FOR FULL SPECIFICATIONS.

VARIABLE AIR VALVES (#-VAV-#)

TYPE MARK	MARK	ROOM SERVED	MANUFACTURER	MAX CFM	OA CFM	SUMMER		WINTER		NOTES
						INDOOR T (DB)	INDOOR RH (%)	INDOOR T (DB)	INDOOR RH (%)	
VAV-1	1	DIRECTORS OFFICE	TRANE	500	150	75	50	70	N/A	
VAV-1	2	ATTIC ARCHIVES	TRANE	500	150	75	50	70	50	2
VAV-2	1	EDUCATION CENTER	TRANE	1,400	450	75	50	70		
VAV-2	2	PALEO VAULT	TRANE	1,400	330	75	55	70		2
VAV-2	3	GEO VAULT	TRANE	1,400	330	75	55	70		2
VAV-2	4	SMALL EXIBIT	TRANE	1,400	360	75	55	70		ADDITIONAL CAPACITY IS FOR MEN'S RESTROOM
VAV-2	5	ETHO VAULT	TRANE	1,400	360	75	55	70		2
VAV-2	6	BIRD VAULT	TRANE	1,400	330	75	55	70		2
VAV-2	7	STAFF OFFICE	TRANE	1,400	405	75	50	70		ADDITIONAL CAPACITY IS FOR WOMEN'S RESTROOM
VAV-2	8	SEISMIC	TRANE	1,400	345	75	55	70		
VAV-2	9	MAIN LOBBY ABOVE	TRANE	1,400	330	75	55	70		
VAV-4	1	MAIN LOBBY	TRANE	2,000	600	75	55	70		
VAV-5	1	PLANETARTIUM	TRANE	3,000	900	75	50	70		
VAV-5	2	SMALL EXHIBIT	TRANE	3,000	900	75	55	70		
VAV-6	1	LARGE EXHIBIT ROTATING	TRANE	4,000	1,200	75	55	70		
VAV-6	2	LARGE EXHIBIT	TRANE	4,000	1,200	75	55	70		

1. MAX NOISE CRITERIA WITH INDUSTRY STANDARD 10 dB ROOM ABSORPTION:

A. OFFICES: NC-25

B. CLASSROOMS: NC-20

C. CONFERENCE ROOMS: NC-20

D. VAULTS/ ARCHIVES/ EXHIBITS/ PLANETARIUM SHALL BE: NC-25

2. ACTIVE HUMIDIFICATION CONTROL

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STAMP

ANDRE GILL

No. 11679

REGISTERED PROFESSIONAL ENGINEER (MECHANICAL)

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AGE

Project Title:

RWP MNH HVAC UPGRADE REBID

Project Number

2120

Location:

1000 ELMWOOD AVE
PROVIDENCE, RI 02907

Drawing Scale

Drawing Title:

MECHANICAL SCHEDULES

Drawing Number

M6.01

Issue Date:

09MAY22

Approved By:

AG

Drawn By:

AGE

Checked By:

AG

(E)NGRID
PADMOUNT XFMR
14
NATIONAL GRID
KWH METER

2 SETS
(4" C, 4-600KCMIL)

(E) SWITCHBOARD "MDP"

800A BUS, 208/120V, 3Ø, 4W

9

(E) CONDENSER

(E) CHILLER

(E) PANEL AC

15

(E) PANEL A

400A BUS, 208/120V, 3Ø, 4W

SPARE

SPARE

(E) PANEL
HALLWAY BASEMENT

(E) PANEL
1ST FLOOR HALL

(E) PANEL
HLA

(E) PANEL
SPD

(E) PANEL
PLANETARIUM A

(E) PANEL
BR

SINGLE LINE EXISTING

SCALE: NTS

A1

NGRID
PADMOUNT XFMR 500 KVA
480/277V SECONDARY
19 40,100
NATIONAL GRID
KWH METER

4-4" C, 8-600KCMIL (IN 2 CONDUITS) 2

SWITCHBOARD "MB4" 1

800A BUS, 480/277V, 3Ø, 4W, 42KAIC

CU-1

AHU-1
HEATER

CU-2

AHU-2

AHU-1
FANS

150KVA XFMR
480 DELTA-208Y/120V
3PH, 4W

2/0 AWG CU

1#2/0 GND

TO APPROVED GROUND

(E) SWITCHBOARD "MDP"

800A BUS, 208/120V, 3Ø, 4W

3

(E) PANEL BR

15

(E) PANEL AC

15

(E) PANEL A

400A BUS, 208/120V, 3Ø, 4W

SPARE

SPARE

(E) PANEL
HALLWAY BASEMENT

(E) PANEL
1ST FLOOR HALL

(E) PANEL
HLA

(E) PANEL
SPD

(E) PANEL
PLANETARIUM A

SINGLE LINE NEW

SCALE: NTS

A2

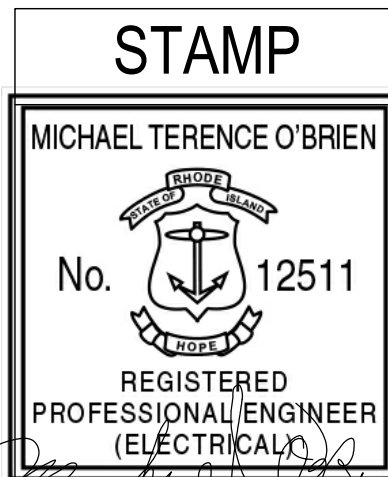
KEY NOTES

- EQUIPMENT SHALL BE SERVICE ENTRANCE RATED. LABEL AS "SERVICE DISCONNECTING MEANS".
- PROVIDE CONDUCTORS AS SHOWN PER NEC 230.50(B). REFER TO ESB 759B SECTION 21.
- PROVIDE CONDUCTORS AND CONDUIT AS INDICATED.
- PROVIDE CONDUCTORS AND CONDUIT AS SHOWN ON POWER PLANS.
- PROVIDE 2/0 AWG CU OR LARGER MAIN BONDING TO COMPLY WITH NEC 250.28.
- PROVIDE CONNECTION TO ALL PRESENT GROUNDING ELECTRODES DESCRIBED IN NEC 250.52. PROVIDE GROUND ROD ELECTRODE(S) PER NEC 250.52(A)(5). CONNECTION TO GROUND ROD MAY BE #6 AWG CU PER NEC 250.66(A).
- PROVIDE TRANSFORMER AS INDICATED. REFER TO E1.10 FOR LOCATION OF TRANSFORMER.
- PROVIDE CONCRETE PAD, TRANSFORMER GROUNDING, AND PRIMARY CONDUIT AS REQUIRED BY NATIONAL GRID. COORDINATE LOCATION BY EXISTING TRANSFORMER WITH NATIONAL GRID. COORDINATE INSTALLATION OF NEW UTILITY TRANSFORMER AND SERVICE WITH NATIONAL GRID. REFER TO AND ADHERE TO NATIONAL GRID SPECIFICATIONS FOR ELECTRICAL INSTALLATIONS AND ESB 759B. PROVIDE CUSTOMER SUPPLIED ITEMS STATED IN ESB 759B AND PER ESB 759B.
- DEMOLISH CONDUCTORS IN CONDUIT. CONDUIT MAY BE RE-USED TO SUPPLY CU-1 AFTER CLEANING THE CONDUIT WITH MANDREL.
- OPEN CIRCUIT BREAKER, DISCONNECT EXISTING SERVICE, AND MARK AS SPARE PRIOR TO ENERGIZING PANEL FROM T-1.
- REMOVE BONDING BETWEEN NEUTRAL (GROUNDED CONDUCTOR) AND GROUND PRIOR TO ENERGIZING MDP FROM T-1.
- REMOVE CONNECTION TO GROUNDING ELECTRODES PRIOR TO ENERGIZING MDP FROM T-1. GROUNDING ELECTRODES ARE TO BE REUSED FOR "MB4". REFER TO NOTE 5.
- PROVIDE CIRCUIT BREAKER IN SWITCHBOARD AS INDICATED. LABEL AS MAIN INCOMING CIRCUIT BREAKER.
- COORDINATE DEMOLITION OF EXISTING SERVICE WITH NATIONAL GRID.
- MAINTAIN EXISTING PANEL AND MODIFY PER PANEL SCHEDULE ON E2.01.
- DEMOLISH CONDUCTORS IN CONDUIT.
- DEMOLISH CONDUCTORS AND CONDUIT.
- CONFIRM HLA IS SUPPLIED BY CIRCUIT BREAKER AND LABEL IN PANEL A. IF NOT SUPPLIED BY PANEL A, NOTIFY ENGINEER AND DO NOT LABEL.
- VALUE FOR SECONDARY. VALUE BASED ON NATIONAL GRID SPECIFICATIONS FOR ELECTRICAL INSTALLATIONS FOR A 3 PHASE, 500 KVA TRANSFORMER WITH A 480Y/277V SECONDARY.



ADDENDUM 2	26APR22
ADDENDUM 1	04APR22
ISSUE FOR BID	01MAR22
CLIENT REVIEW	21SEP21
Revision:	Date:

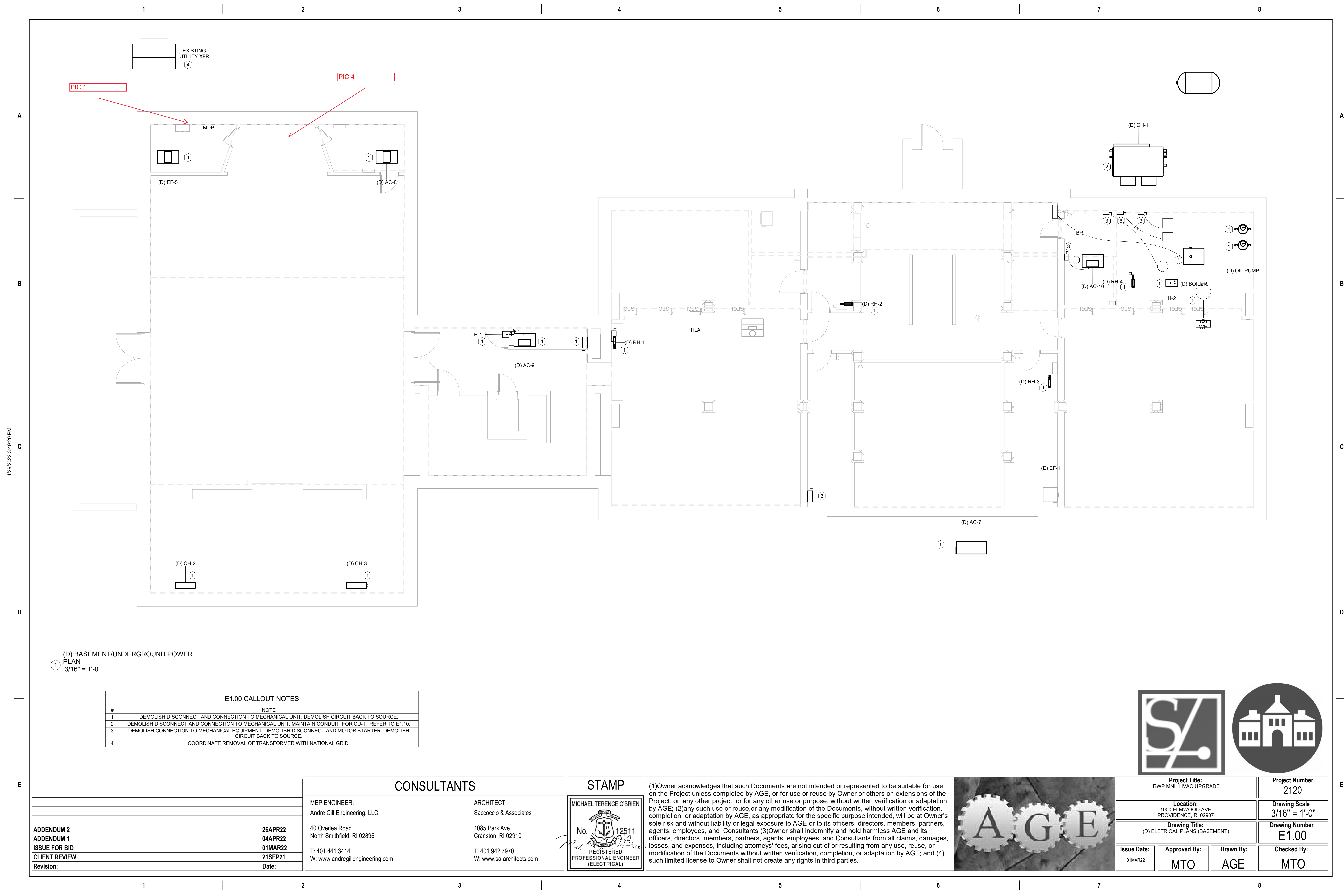
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Project Title: RWP MNH HVAC UPGRADE		Project Number 2120	
Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale	
Drawing Title: SINGLE LINE		Drawing Number E0.02	
Issue Date: 01MAR22	Approved By: MTO	Drawn By: AGE	Checked By: MTO



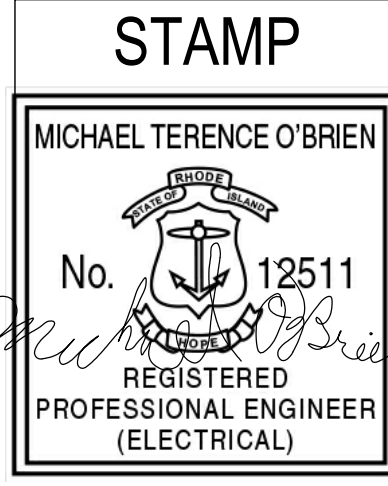
(D) BASEMENT/UNDERGROUND POWER
PLAN
3/16" = 1'-0"

E1.00 CALLOUT NOTES	
#	NOTE
1	DEMOLISH DISCONNECT AND CONNECTION TO MECHANICAL UNIT. DEMOLISH CIRCUIT BACK TO SOURCE.
2	DEMOLISH DISCONNECT AND CONNECTION TO MECHANICAL UNIT. MAINTAIN CONDUIT FOR CU-1. REFER TO E1.10.
3	DEMOLISH CONNECTION TO MECHANICAL EQUIPMENT. DEMOLISH DISCONNECT AND MOTOR STARTER. DEMOLISH CIRCUIT BACK TO SOURCE.
4	COORDINATE REMOVAL OF TRANSFORMER WITH NATIONAL GRID.



ADDENDUM 2	26APR22
ADDENDUM 1	04APR22
ISSUE FOR BID	01MAR22
CLIENT REVIEW	21SEP21
Revision:	Date:

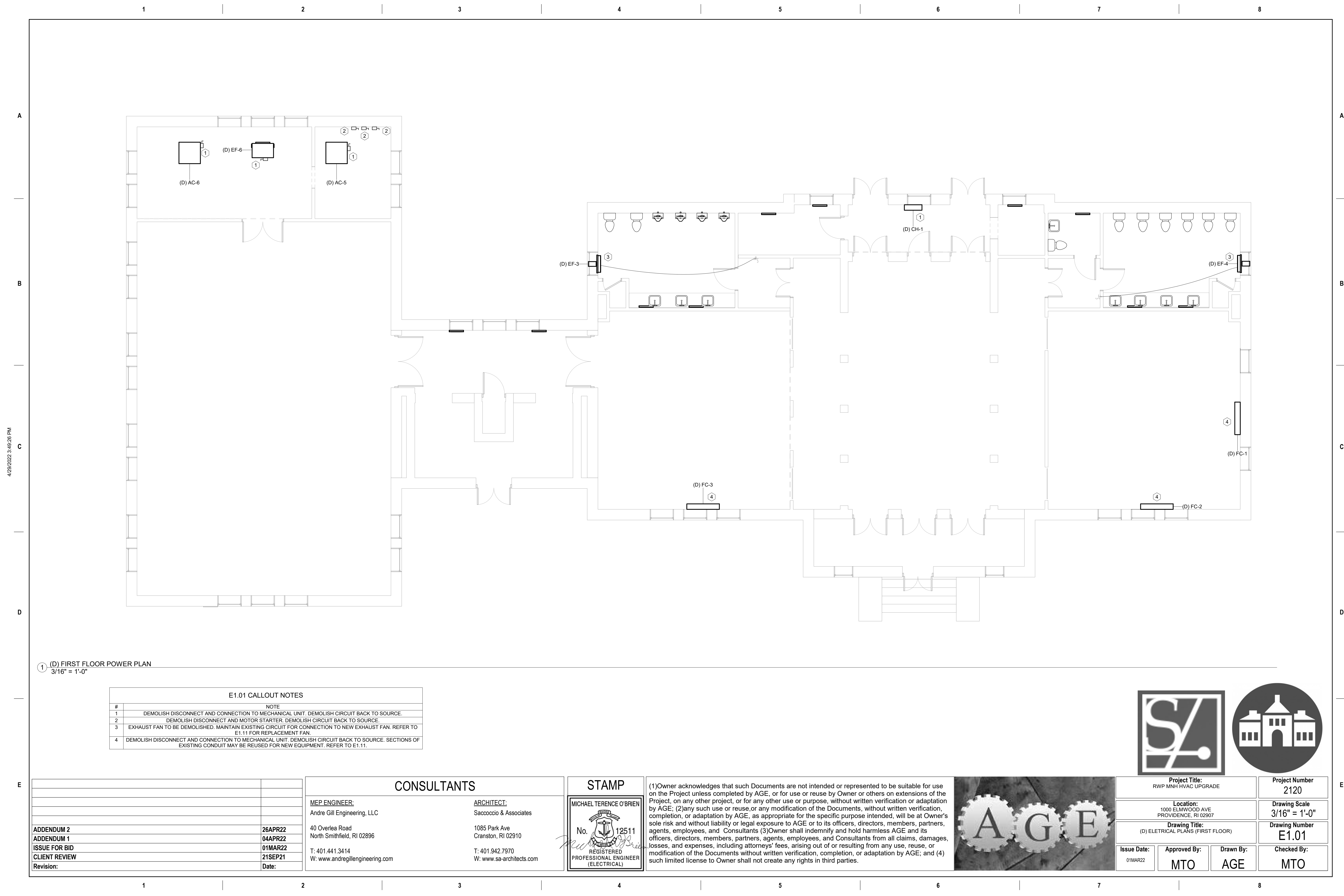
CONSULTANTS	
MEP ENGINEER: Andre Gill Engineering, LLC 40 Overlea Road North Smithfield, RI 02896 T: 401.441.3414 W: www.andregillengineering.com	ARCHITECT: Saccoccio & Associates 1085 Park Ave Cranston, RI 02910 T: 401.942.7970 W: www.sa-architects.com



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Project Title: RWP MNH HVAC UPGRADE		Project Number 2120	
Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale 3/16" = 1'-0"	
Drawing Title: (D) ELETRICAL PLANS (BASEMENT)		Drawing Number E1.00	
Issue Date: 01MAR22	Approved By: MTO	Drawn By: AGE	Checked By: MTO

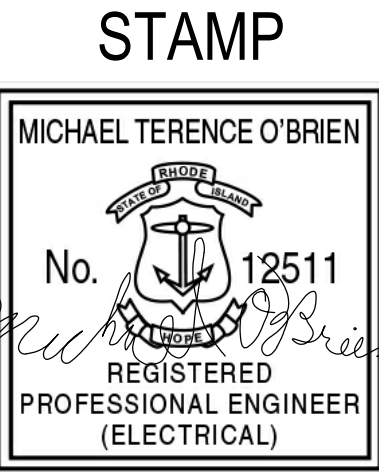


① (D) FIRST FLOOR POWER PLAN
3/16" = 1'-0"

E1.01 CALLOUT NOTES	
#	NOTE
1	DEMOLISH DISCONNECT AND CONNECTION TO MECHANICAL UNIT. DEMOLISH CIRCUIT BACK TO SOURCE.
2	DEMOLISH DISCONNECT AND MOTOR STARTER. DEMOLISH CIRCUIT BACK TO SOURCE.
3	EXHAUST FAN TO BE DEMOLISHED. MAINTAIN EXISTING CIRCUIT FOR CONNECTION TO NEW EXHAUST FAN. REFER TO E1.11 FOR REPLACEMENT FAN.
4	DEMOLISH DISCONNECT AND CONNECTION TO MECHANICAL UNIT. DEMOLISH CIRCUIT BACK TO SOURCE. SECTIONS OF EXISTING CONDUIT MAY BE REUSED FOR NEW EQUIPMENT. REFER TO E1.11.

ADDENDUM 2	26APR22
ADDENDUM 1	04APR22
ISSUE FOR BID	01MAR22
CLIENT REVIEW	21SEP21
Revision:	Date:

CONSULTANTS	
MEP ENGINEER: Andre Gill Engineering, LLC 40 Overlea Road North Smithfield, RI 02896 T: 401.441.3414 W: www.andregillengineering.com	ARCHITECT: Saccoccio & Associates 1085 Park Ave Cranston, RI 02910 T: 401.942.7970 W: www.sa-architects.com

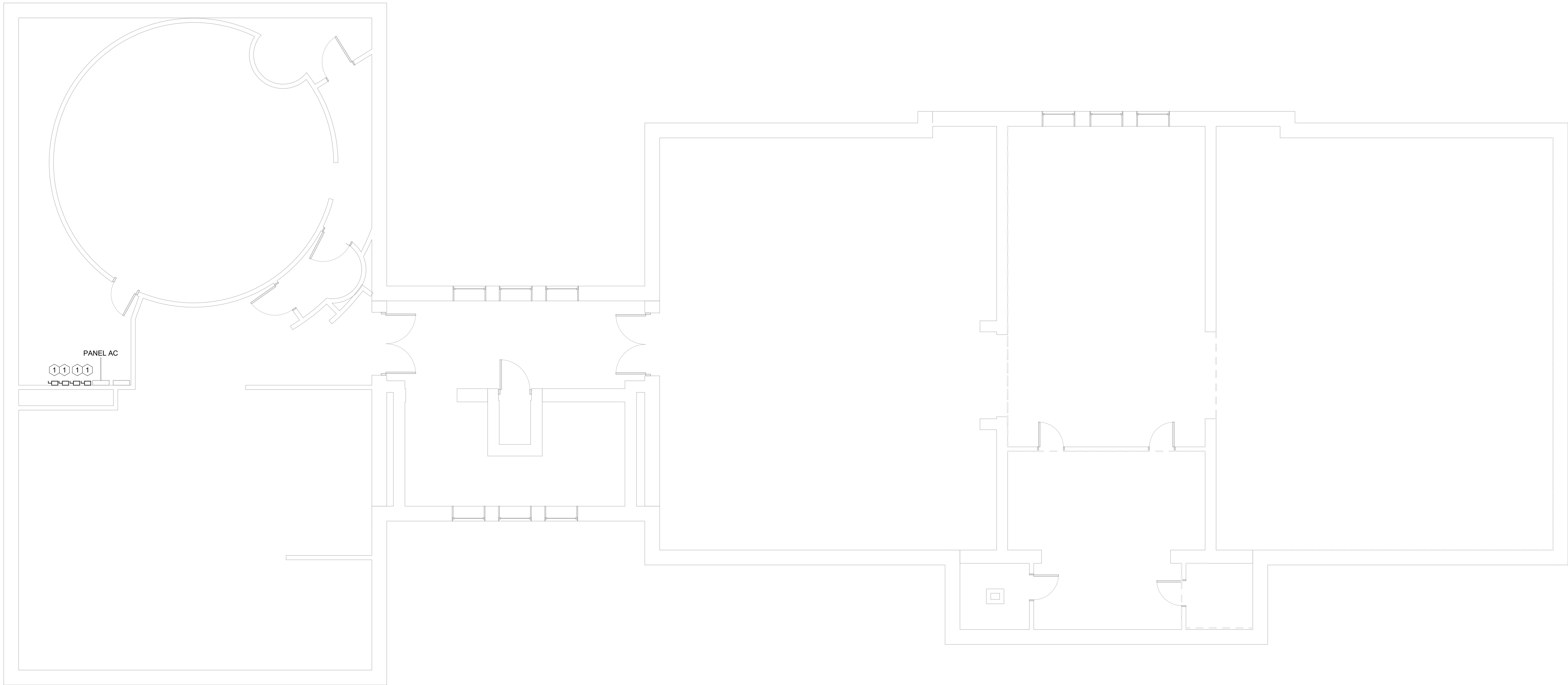


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Project Title: RWP MNH HVAC UPGRADE		Project Number 2120	
Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale 3/16" = 1'-0"	
Drawing Title: (D) ELETRICAL PLANS (FIRST FLOOR)		Drawing Number E1.01	
Issue Date: 01MAR22	Approved By: MTO	Drawn By: AGE	Checked By: MTO

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① (D) SECOND FLOOR POWER PLAN
3/16" = 1'-0"

E1.02 CALLOUT NOTES	
#	NOTE
1	DEMOLISH DISCONNECT AND MOTOR STARTER. DEMOLISH CIRCUIT BACK TO SOURCE.



ADDENDUM 2	26APR22
ADDENDUM 1	04APR22
ISSUE FOR BID	01MAR22
CLIENT REVIEW	21SEP21
Revision:	Date:

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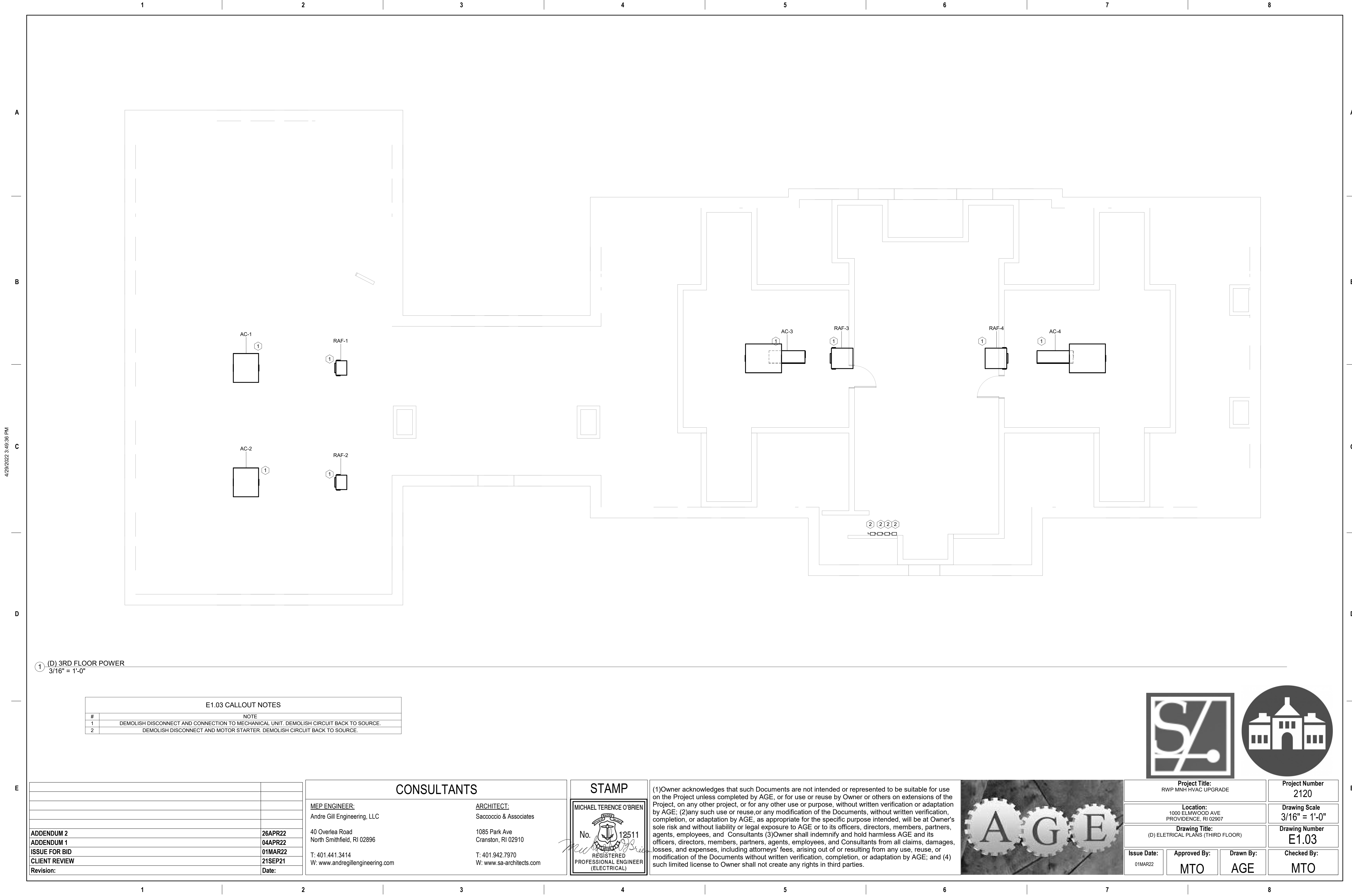


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Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale 3/16" = 1'-0"
Drawing Title: (D) ELETRICAL PLANS (SECOND FLOOR)		Drawing Number E1.02
Issue Date: 01MAR22	Approved By: MTO	Drawn By: AGE

Checked By: MTO

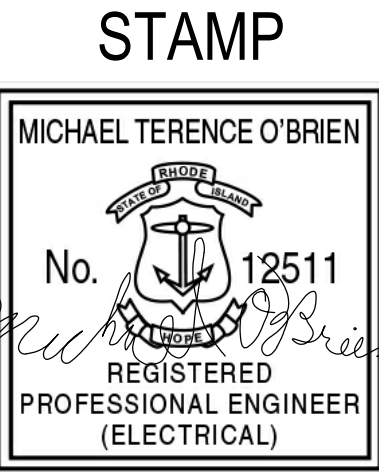


① (D) 3RD FLOOR POWER
3/16" = 1'-0"

E1.03 CALLOUT NOTES	
#	NOTE
1	DEMOLISH DISCONNECT AND CONNECTION TO MECHANICAL UNIT. DEMOLISH CIRCUIT BACK TO SOURCE.
2	DEMOLISH DISCONNECT AND MOTOR STARTER. DEMOLISH CIRCUIT BACK TO SOURCE.

ADDENDUM 2	26APR22
ADDENDUM 1	04APR22
ISSUE FOR BID	01MAR22
CLIENT REVIEW	21SEP21
Revision:	Date:

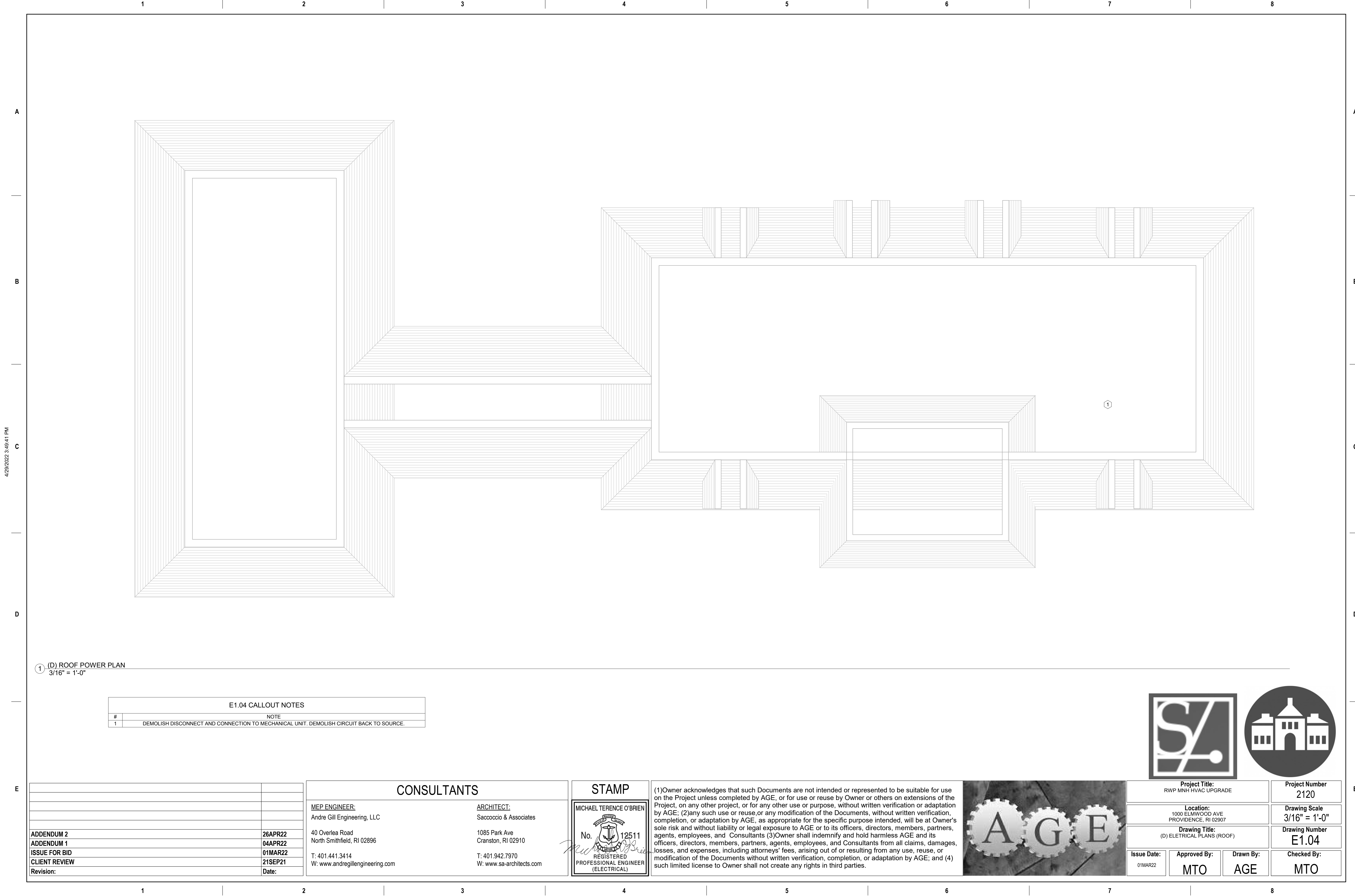
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Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale 3/16" = 1'-0"	
Drawing Title: (D) ELETRICAL PLANS (THIRD FLOOR)		Drawing Number E1.03	
Issue Date: 01MAR22	Approved By: MTO	Drawn By: AGE	Checked By: MTO



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1 (D) ROOF POWER PLAN
3/16" = 1'-0"

E1.04 CALLOUT NOTES	
#	NOTE
1	DEMOLISH DISCONNECT AND CONNECTION TO MECHANICAL UNIT. DEMOLISH CIRCUIT BACK TO SOURCE.

ADDENDUM 2	26APR22
ADDENDUM 1	04APR22
ISSUE FOR BID	01MAR22
CLIENT REVIEW	21SEP21
Revision:	Date:

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Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale 3/16" = 1'-0"	
Drawing Title: (D) ELECTRICAL PLANS (ROOF)		Drawing Number E1.04	
Issue Date: 01MAR22	Approved By: MTO	Drawn By: AGE	Checked By: MTO

A

B

C

D

E

A

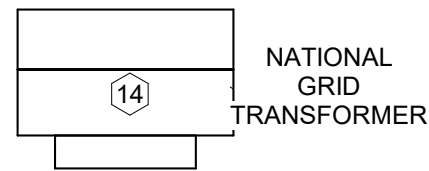
B

C

D

E

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NATIONAL
GRID
TRANSFORMER

PIC 1

PIC 2

PIC 4

PNL A

MDP

MB4

1

T1

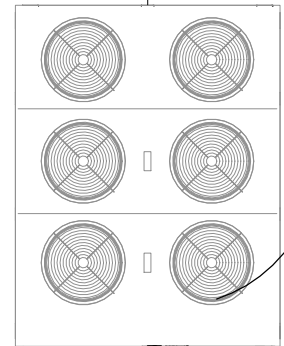
15

SPB

MB4-13,15,17

17

CU-1
CU-1

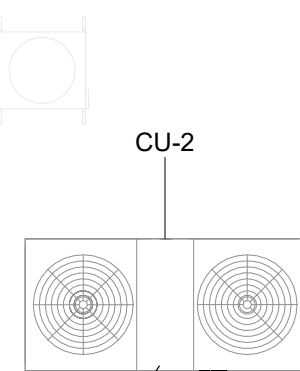


MB4-1,3,5

3

2

CU-2



5

MB4-7,9,11

4

13

BR

9

BR-8,10,12

1

UH-1

8

MB4-8,10,12

7

BR-3,5

10

8

H-2

BR-23,25

11

8

WH-1

6

AHU-2

6

(E) EF-1

12

BR-19,21

8

MAHU-1

8

(N) WATER TREATMENT

HLA-17

HLA

(E) FH

HLA-7,9

10

H-1

8

MB4-2,4,6

5

MB4-13,15,17

17

CU-1

CU-1

MB4-1,3,5

3

2

CU-2

CU-2

MB4-7,9,11

4

5

13

BR

9

BR-8,10,12

1

UH-1

8

MB4-8,10,12

7

BR-3,5

10

8

H-2

BR-23,25

11

8

WH-1

6

AHU-2

6

(E) EF-1

12

BR-19,21

8

MAHU-1

8

(N) WATER TREATMENT

HLA-17

HLA

(E) FH

HLA-7,9

10

H-1

8

MB4-2,4,6

5

MB4-13,15,17

17

CU-1

CU-1

MB4-1,3,5

3

2

CU-2

CU-2

MB4-7,9,11

4

5

13

BR

9

BR-8,10,12

1

UH-1

8

MB4-8,10,12

7

BR-3,5

10

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H-2

BR-23,25

11

8

WH-1

6

AHU-2

6

(E) EF-1

12

BR-19,21

8

MAHU-1

8

(N) WATER TREATMENT

HLA-17

HLA

(E) FH

HLA-7,9

10

H-1

8

MB4-2,4,6

5

MB4-13,15,17

17

CU-1

CU-1

MB4-1,3,5

3

2

CU-2

CU-2

MB4-7,9,11

4

5

13

BR

9

BR-8,10,12

1

UH-1

8

MB4-8,10,12

7

BR-3,5

10

8

H-2

BR-23,25

11

8

WH-1

6

AHU-2

6

(E) EF-1

12

BR-19,21

8

MAHU-1

8

(N) WATER TREATMENT

HLA-17

HLA

(E) FH

HLA-7,9

10

H-1

8

MB4-2,4,6

5

MB4-13,15,17

17

CU-1

CU-1

MB4-1,3,5

3

2

CU-2

CU-2

MB4-7,9,11

4

5

13

BR

9

BR-8,10,12

1

UH-1

8

MB4-8,10,12

7

BR-3,5

10

8

H-2

BR-23,25

11

8

WH-1

6

AHU-2

6

(E) EF-1

12

BR-19,21

8

MAHU-1

8

(N) WATER TREATMENT

HLA-17

HLA

(E) FH

HLA-7,9

10

H-1

8

MB4-2,4,6

5

MB4-13,15,17

17

CU-1

CU-1

MB4-1,3,5

3

2

CU-2

CU-2

MB4-7,9,11

4

5

13

BR

9

BR-8,10,12

1

UH-1

8

MB4-8,10,12

7

BR-3,5

10

8

H-2

BR-23,25

11

8

WH-1

6

AHU-2

6

(E) EF-1

12

BR-19,21

8

MAHU-1

8

(N) WATER TREATMENT

HLA-17

HLA

(E) FH

HLA-7,9

10

H-1

8

MB4-2,4,6

5

MB4-13,15,17

17

CU-1

CU-1

MB4-1,3,5

3

2

CU-2

CU-2

MB4-7,9,11

4

5

13

BR

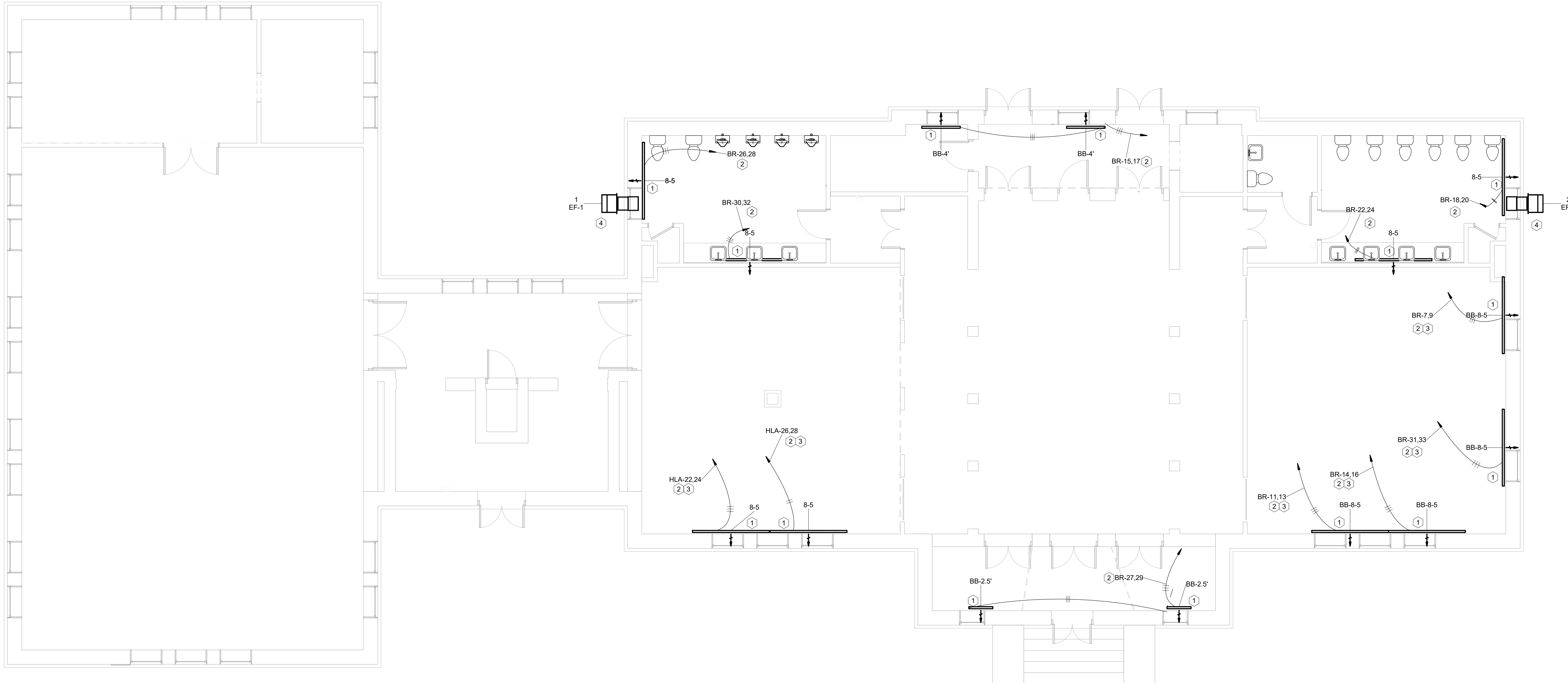
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BR-8,10,12

1

UH-1

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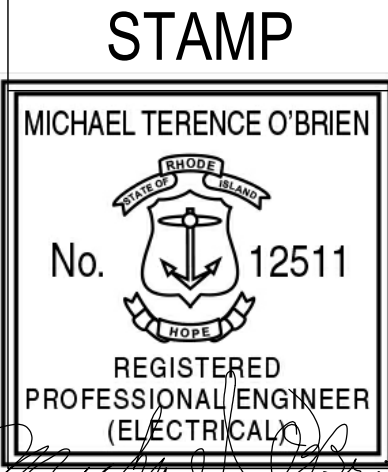
1 (N) FIRST FLOOR POWER PLAN
3/16" = 1'-0"

E1.11 CALLOUT NOTES	
#	NOTE
1	PROVIDE 2 POLE SWITCH TO DISCONNECT CIRCUIT TO MECHANICAL UNIT.
2	PROVIDE 2-#12AWG & #12G IN 3/4" C.
3	LENGTHS OF EXISTING CONDUIT MAY BE RE-USED FROM PREVIOUS CIRCUIT DEMOLISHED. REFER TO E1.01 FOR DEMOLISHED CIRCUITS.
4	PROVIDE CONNECTION TO REPLACEMENT FAN WITH EXISTING CIRCUIT.



ADDENDUM 2	26APR22
ADDENDUM 1	04APR22
ISSUE FOR BID	01MAR22
CLIENT REVIEW	21SEP21
Revision:	Date:

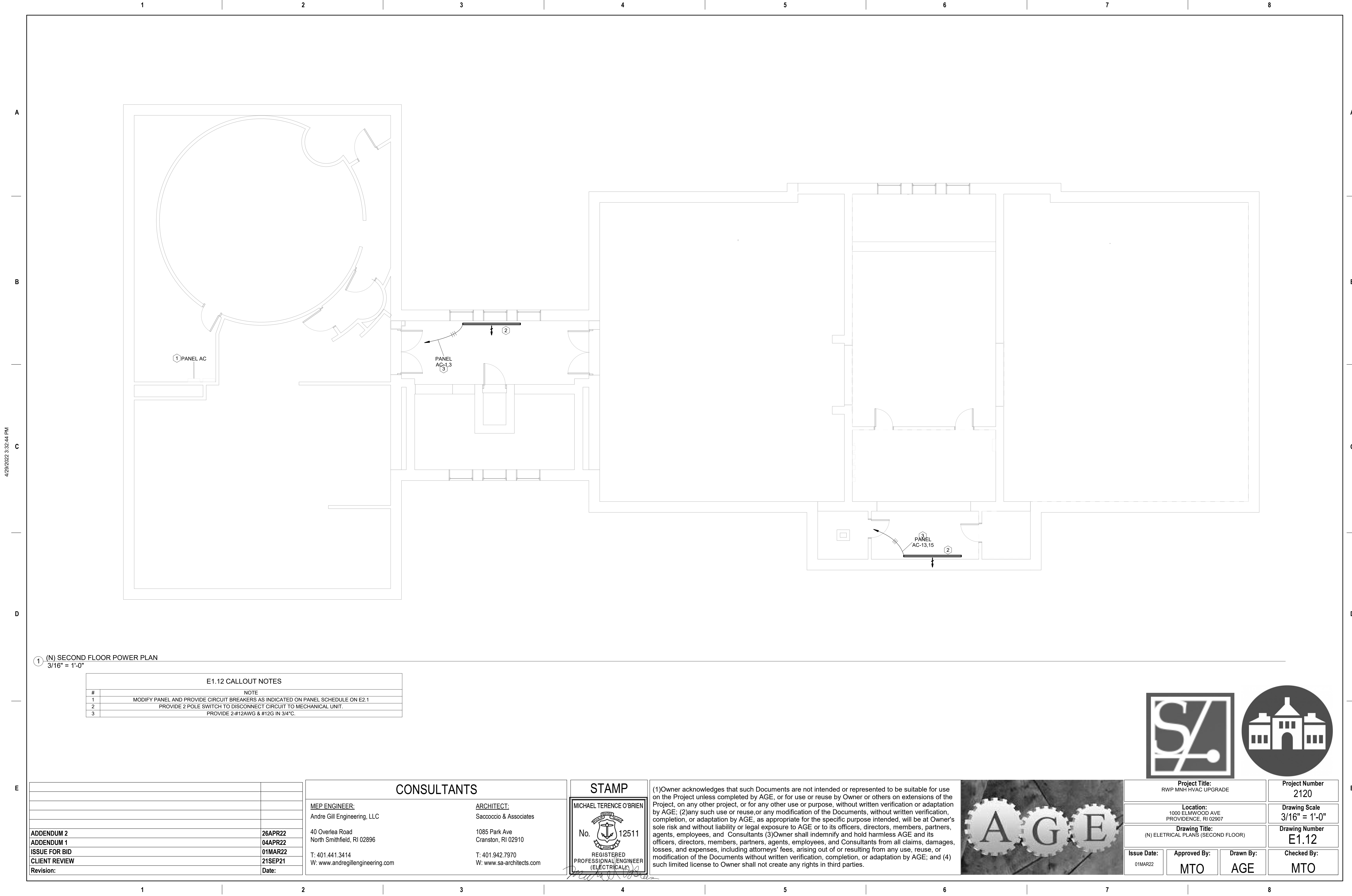
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Project Title: RWP MNH HVAC UPGRADE		Project Number 2120	
Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale 3/16" = 1'-0"	
Drawing Title: (N) ELECTRICAL PLANS (FIRST FLOOR)		Drawing Number E1.11	
Issue Date: 01MAR22	Approved By: MTO	Drawn By: AGE	Checked By: MTO



1 (N) SECOND FLOOR POWER PLAN
3/16" = 1'-0"

E1.12 CALLOUT NOTES	
#	NOTE
1	MODIFY PANEL AND PROVIDE CIRCUIT BREAKERS AS INDICATED ON PANEL SCHEDULE ON E2.1
2	PROVIDE 2 POLE SWITCH TO DISCONNECT CIRCUIT TO MECHANICAL UNIT.
3	PROVIDE 2-#12AWG & #12G IN 3/4"C.

ADDENDUM 2	26APR22
ADDENDUM 1	04APR22
ISSUE FOR BID	01MAR22
CLIENT REVIEW	21SEP21
Revision:	Date:

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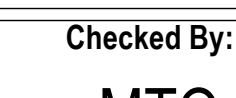
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Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale 3/16" = 1'-0"	
Drawing Title: (N) ELETRICAL PLANS (SECOND FLOOR)		Drawing Number E1.12	
Issue Date: 01MAR22	Approved By: MTO	Drawn By: AGE	Checked By: MTO



A

B

C

D

E

A

B

C

D

E

Branch Panel: BR ①

Location: BOILER ROOM-2 009-2
Supply From: MDP
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10KAIC
Mains Type: MLO
Mains Rating: 225 A
MCB Rating: 1 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
BR-1	Lighting	20 A	1	192 VA	0 VA		3	30 A	Spare	BR-2
BR-3	H-2	30 A	2		2000...	0 VA	--	--	--	BR-4
BR-5	--	--	--				--	--	--	BR-6
BR-7	Heating	20 A	2	1250...	2500...		3	30 A	UH-1	BR-8
BR-9	--	--	--		1250...	2500...	--	--	--	BR-10
BR-11	Heating	20 A	2			1250...	2500...	--	--	BR-12
BR-13	--	--	--	1250...	1250...		2	20 A	Heating	BR-14
BR-15	Heating	20 A	2		1000...	1250...	--	--	--	BR-16
BR-17	--	--	--			1000...	1250...	2	20 A	Heating
BR-19	MAHU-1	20 A	2	500 VA	1250...		--	--	--	BR-20
BR-21	--	--	--		500 VA	1250...	2	20 A	Heating	BR-22
BR-23	WH-1	20 A	2			2250...	1250...	--	--	BR-24
BR-25	--	--	--	2250...	1250...		2	20 A	Heating	BR-26
BR-27	Heating	20 A	2		500 VA	1250...	--	--	--	BR-28
BR-29	--	--	--			500 VA	1250...	2	20 A	Heating
BR-31	Heating	20 A	2	1250...	1250...		--	--	--	BR-32
BR-33	--	--	--		1250...	0 VA	1	20 A	RESTROOM EXHAUST FANS	BR-34
BR-35	Receptacle BOILER ROOM-3 19-3	20 A	1			180 VA	0 VA	1	20 A	Spare
BR-37	Spare	20 A	1	0 VA	0 VA		1	20 A	Spare	BR-36
BR-39	EF	20 A	1		1000...	0 VA	1	20 A	Spare	BR-40
BR-41	Spare	20 A	1			0 VA	0 VA	1	20 A	Spare
Total Load:				13739 VA		13335 VA				
Total Amps:				115 A		112 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
HVAC	5831 VA	100.00%	5831 VA	
Heating	30500 VA	100.00%	30500 VA	Total Conn. Load: 39860 VA
Other	4500 VA	100.00%	4500 VA	Total Est. Demand: 39860 VA
Receptacle	180 VA	100.00%	180 VA	Total Conn.: 111 A
Lighting	192 VA	100.00%	192 VA	Total Est. Demand: 111 A

Notes:

Branch Panel: HLA ④

Location: PALEO VAULT 005
Supply From: PNL A
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10KAIC
Mains Type: MLO
Mains Rating: 100 A
MCB Rating: 1 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
HLA-1										HLA-2
HLA-3										HLA-4
HLA-5										HLA-6
HLA-7	H-1 (HUMIDIFIER)	20 A	2	2000...	0 VA		1	20 A	Spare	HLA-8
HLA-9	--	--	--		2000...		--	--	--	HLA-10
HLA-11	Spare	30 A	3			0 VA				HLA-12
HLA-13	--	--	--	0 VA						HLA-14
HLA-15	--	--	--		0 VA					HLA-16
HLA-17	Receptacle STORAGE 2 14	20 A	1			180 VA				HLA-18
HLA-19										HLA-20
HLA-21	Spare	20 A	3		0 VA	1250...	2	20 A	Heating	HLA-22
HLA-23	--	--	--			0 VA	1250...	--	--	HLA-24
HLA-25	--	--	--	0 VA	1250...		2	20 A	Heating	HLA-26
HLA-27					1250...		--	--	--	HLA-28
HLA-29										HLA-30
HLA-31										HLA-32
HLA-33										HLA-34
HLA-35										HLA-36
HLA-37										HLA-38
HLA-39										HLA-40
HLA-41										HLA-42
Total Load:				3092 VA		4272 VA				
Total Amps:				28 A		38 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
HVAC	4000 VA	100.00%	4000 VA	
Heating	5000 VA	100.00%	5000 VA	Total Conn. Load: 8713 VA
Receptacle	180 VA	100.00%	180 VA	Total Est. Demand: 8713 VA
				Total Conn.: 24 A
				Total Est. Demand: 24 A

Notes:

Branch Panel: PANEL AC ④

Location: STORAGE 203
Supply From: PNL A
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10
Mains Type: MLO
Mains Rating: 100 A
MCB Rating: 1 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	Heating 3RD FL HALLWAY 60	20 A	2	1250...	0 VA		3	30 A	Spare	2
3	--	--	--		1250...	0 VA	--	--	--	4
5	Heating ARCHIVES	20 A	2			1250...	0 VA	--	--	6
7	--	--	--	1250...	0 VA		3	20 A	Spare	8
9	H-3 (HUMIDIFIER)	30 A	2		2000...	0 VA	--	--	--	10
11	--	--	--			2000...	0 VA	--	--	12
13	Heating	20 A	2	1250...	0 VA		3	20 A	Spare	14
15	--	--	--		1250...	0 VA	--	--	--	16
17	Space	--	1			--	0 VA	--	--	18
19	Spare	20 A	3	0 VA	0 VA		3	20 A	Spare	20
21	--	--	--		0 VA	0 VA	--	--	--	22
23	--	--	--			0 VA	0 VA	--	--	24
25	Spare	20 A	3	0 VA	0 VA		3	20 A	Spare	26
27	--	--	--		0 VA	0 VA	--	--	--	28
29	--	--	--			0 VA	0 VA	--	--	30
31	Spare	20 A	3	0 VA						32
33	--	--	--		0 VA					34
35	--	--	--			0 VA				36
37										38
39										40
41										42
Total Load:				3750 VA		4272 VA				
Total Amps:				32 A		36 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
HVAC	4000 VA	100.00%	4000 VA	
Heating	7500 VA	100.00%	7500 VA	Total Conn. Load: 10966 VA
				Total Est. Demand: 10966 VA
				Total Conn.: 30 A
				Total Est. Demand: 30 A

Notes:

E2.01 CALLOUT NOTES

#	NOTE
1	EXISTING PANEL: PROVIDE MODIFICATIONS TO PANEL LAYOUT AS SHOWN BELOW. AFTER DEMOLITION CONFIRM SPARES ARE AS INDICATED. NOTIFY ENGINEER OF LOADS NOT SHOWN AND STILL REMAIN AFTER DEMOLITION.
2	PROVIDE CIRCUIT BREAKER AS INDICATED FOR LOAD INDICATED.
3	CONFIRM NO LOAD AFTER DEMOLITION, LABEL AS SPARE AND LEAVE CIRCUIT BREAKER OPEN. NOTIFY ENGINEER IF OTHERWISE.
4	EXISTING CIRCUITS TO REMAIN NOT SHOWN ON PANEL.
5	NEW 2 POLE CIRCUIT BREAKERS MAY BE PLACED IN OTHER LOCATIONS MARKED WITH NOTE 3 IN PANEL AC TO HELP WITH PHASING.
6	CONFIRM NO LOAD AFTER DEMOLITION, PLACE FILLER IN SPACE TO PREVENT EXPOSED BUSSING.
7	PROVIDE GFCI CIRCUIT BREAKER AS INDICATED FOR LOAD INDICATED.



ADDENDUM 2	26APR22
ADDENDUM 1	04APR22
ISSUE FOR BID	01MAR22
CLIENT REVIEW	21SEP21
Revision:	Date:

CONSULTANTS	
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Project Title: RWP MNH HVAC UPGRADE		Project Number 2120	
Location: 1000 ELMWOOD AVE PROVIDENCE, RI 02907		Drawing Scale	
Drawing Title: PANEL SCHEDULE		Drawing Number E2.01	
Issue Date: 01MAR22	Approved By: MTO	Drawn By: AGE	Checked By: MTO

A

B

5/9/2022 5:00:46 PM

C

D

E

A

B

C

D

E

Branch Panel: MB4

Location: STORAGE L 6

Supply From:

Mounting: Surface

Enclosure: NEMA 1 Indoor

Volts: 480/277 Wye

Phases: 3

Wires: 4

A.I.C. Rating: Use Panel Short Circuit & Refer to...

Mains Type:

Mains Rating: 800 A

MCB Rating: 800 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
MB4-1	CU-1	150 A	3	2992...	4863...		3	250 A	AHU-1 HEATERS	MB4-2
MB4-3	--	--	--		2992...	4863...	--	--		MB4-4
MB4-5	--	--	--			2992...	4863...	--		MB4-6
MB4-7	CU-2	60 A	3	1162...	2533...		3	90 A	AHU-2	MB4-8
MB4-9	--	--	--		1162...	2533...	--	--		MB4-10
MB4-11	--	--	--			1162...	2533...	--		MB4-12
MB4-13	AHU-1 FANS	80 A	3	1432...						MB4-14
MB4-15	--	--	--		1432...					MB4-16
MB4-17	--	--	--			1432...				MB4-18
MB4-19	150 kVA, 277 V/480 V, Three Phase, 4 Wires, Wye	300 A	3	0 VA						MB4-20
MB4-21	--	--	--		0 VA					MB4-22
MB4-23	--	--	--			0 VA				MB4-24
MB4-25										MB4-26
MB4-27										MB4-28
MB4-29										MB4-30
MB4-31										MB4-32
MB4-33										MB4-34
MB4-35										MB4-36
MB4-37										MB4-38
MB4-39										MB4-40
MB4-41										MB4-42
Total Load:				92694 VA	92694 VA	92694 VA				
Total Amps:				335 A	335 A	335 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
HVAC	184026 VA	100.00%	184026 VA	
Heating	145900 VA	100.00%	145900 VA	Total Conn. Load: 278081 VA
				Total Est. Demand: 278081 VA
				Total Conn.: 334 A
				Total Est. Demand: 334 A

Notes:

E2.02 CALLOUT NOTES	
#	NOTE
1	TRANSFORMER SUPPLIES EXISTING MDP. MDP'S PEAK DEMAND FROM PREVIOUS YEAR WAS 84KVA.
2	TOTAL DEMAND ONLY INDICATES NEW 480V HVAC DEMAND. LOAD DOES NOT INDICATE 208/120V DEMAND.

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ADDENDUM 1	04APR22
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STAMP	
MICHAEL TERENCE O'BRIEN	
No. 12511	
REGISTERED PROFESSIONAL ENGINEER (ELECTRICAL)	

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Drawing Title: PANEL SCHEDULE		Drawing Number E2.02
Issue Date: 01MAR22	Approved By: MTO	Drawn By: AGE
		Checked By: MTO